

Nos. 2023-2397, -2398  
Volume III of III, Appx4685 to Appx5175

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In the  
**United States Court of Appeals**  
for the Federal Circuit

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STRYKER EUROPEAN OPERATIONS HOLDINGS LLC,

*Appellant,*

v.

OSTEOMED LLC,

*Appellee.*

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in  
Nos. IPR2022-00487 and IPR2022-00488.

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**CORRECTED JOINT APPENDIX**

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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STRYKER CORPORATION and  
WRIGHT MEDICAL TECHNOLOGY, INC.,  
Petitioner,

v.

OSTEOMED LLC,  
Patent Owner.

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Before SHERIDAN K. SNEDDEN, RICHARD H. MARSCHALL, and  
JAMIE T. WISZ, *Administrative Patent Judges*.

SNEDDEN, *Administrative Patent Judge*, concurring.

I concur that Slater does not anticipate claim 15, and reach that result for the following additional reason.

Independent claim 10 recites a “transfixation screw hole comprising *an inner surface configured to direct a transfixation screw* through the transfixation screw hole such that the transfixation screw extends alongside the bridge portion *at a trajectory configured to pass through a first position on the first bone and a second position on the second bone once the plate is*

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placed across the joint.” Ex. 1001, 14:19–27 (emphasis added). A dispute between the parties is whether the claim recitation for “an inner surface configured to direct the transfixation screw . . . at a trajectory” is taught by Slater. Pet. 27.

To that point, Petitioner contends that Slater identifies openings 26 and 93 that “each receive a fixation screw that passes through those openings so that the screw is implanted at an angle.” Pet. 27 (citing Ex. 1005, 11:19–21, 13:21–24, Figs. 1 and 7). More specifically, Petitioner contends that Slater’s “transfixation screw hole (26 or 93) . . . comprises an inner surface (unnumbered in Slater’s drawings) configured to direct the transfixation screw (25) through the transfixation screw hole such that the transfixation screw extends through the bridge portion (portions of 5 and 20 or portions of 81 and 90) at a trajectory configured to pass through a first position on the first discrete bone (tibia 4), a portion of the joint (2), and a second position on the second discrete bone (talus 3) once the plate (1 or 80) is placed across the joint.” *Id.* (citing Ex. 1002 ¶ 111; Ex. 1005, 11:19–25, 13:21–25).

In its Response, Patent Owner directs our attention to Figure 1 of Slater, and contends that this Figure “depicts, in phantom, the use of a screw that passes through the tibia and terminates in the talus.” PO Resp. 10 (citing Ex. 2002 ¶ 55). “The hole that the screw 25 passes through is constructed in a manner that allows the angle of the screw to be modified as the plate is affixed to the ankle joint.” *Id.* (citing Ex. 2002 ¶ 56; Ex. 1005, 11:21–22). “This hole is described as ‘slotted,’ meaning that at least a portion of the hole towards the inner surface of the plate is oblong in one direction in order to allow the screw 25 to pass through at multiple angles.”

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*Id.* (citing Ex. 2002 ¶ 56; Ex. 1005, 24:4–8); *see also* Ex. 1005, 16:28–30 (“One significant advantage of the plate described . . . is the oblique screw portal allowing for various angles and the ability to incorporate more joints into the arthrodesis as required.”), Fig. 1.

Furthermore, Patent Owner notes that Slater “provides no detail regarding the structure of the inner surface of the hole” because a surgeon using Slater’s plate “determines the path in situ with a range of options available.” PO Resp. 32–33 (citing, Ex. 1005, Fig 1; Ex. 2002 ¶ 96). That is, “*Slater* describes a plate that intentionally allows for varied angles through **the same hole**.” *Id.* at 33–34 (citing Ex. 1005, 16:28–30 (“[o]ne significant advantage of the plate described [in *Slater*] is the **oblique screw portal allowing for various angles** and the ability to incorporate more joints into the arthrodesis as required”); Ex. 2002 ¶ 102)). Patent Owner contends that, because the hole identified by Petitioner as Slater’s transfixation screw hole allows for varied angles through the same hole, Slater fails to disclose a transfixation screw hole having “an inner surface configured to direct the transfixation screw through the transfixation screw hole . . . at a trajectory,” where “trajectory” is properly interpreted to mean an “allowable fixed angle relative to the neutral bending axis of the joint.” PO Resp. 16–19, 32–34.

In its Reply, Petitioner contends that Patent Owner’s suggestion that trajectory limits the challenged claims to a single, fixed angle is “unsupported by the intrinsic evidence.” Reply 4. Specifically, Petitioner contends that

The claims recite only that the claimed “trajectory” is the transfixation screw trajectory, and that such trajectory is configured to pass through “a first position on the first bone and

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a second position on the second bone” once the plate is placed across the joint. (EX1001, cls. 1, 10). *There is a wide range of angles at which this can be achieved, not just one fixed angle.* (EX1001, cl. 4; EX1028, ¶11)).

Reply 2 (emphasis added). Petitioner further contends that “the inner surface of the transfixation screw hole does not, alone, determine the precise angle of the trajectory,” as “the size, shape, and geometry of the screw also determine what angles the trajectory may have.” *Id.* at 3 (citing Ex. 1028 ¶ 12).

Moreover, Petitioner contends that “Patent Owner’s reliance on the ‘neutral bending axis’ as a point of reference for ‘trajectory’ is nonsensical” because “the neutral bending axis of a particular joint may shift depending on the position of the bone plate and the loads exerted on that joint” and, thus, “the ‘trajectory’ cannot be known by analyzing a bone plate or system alone.” *Id.* at 2–3 (citing Ex. 2002 ¶ 39).

I begin this analysis by clarifying that I understand Patent Owner’s position to be that the “inner surface of the transfixation screw hole” is not a hole configured to allow a screw to be inserted into a bone at a plurality of angles, but that the language of the claim requires a configuration that achieves a screw hole that directs a screw at a particular angle (or “trajectory”), where that angle may be configured within a certain range. PO Resp. 18–19 (citing, Ex. 2002 ¶ 95; Ex. 1001, 6:32–37). Thus, the dispute between the parties is whether a singular “inner surface of the transfixation screw hole” may be configured to operate so as to accommodate a range of angles, for example, in the same manner that Slater’s oblique screw portal allows for screws to be inserted at varied angles through the same hole. *Id.*; Ex. 1002 ¶ 102 (“One significant

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advantage of the plate described [in Slater] is the oblique screw portal allowing for various angles and **the ability to incorporate more joints into the arthrodesis** as required.”) (quoting Ex. 1005, 16:28–30); Ex. 2002 ¶ 102 (“I agree with Dr. Gall that *Slater* teaches a screw hole that allows a screw to be inserted at a wide range of angles”).

With that important distinction in mind, I consider Patent Owner’s contention that the term “a trajectory” as used in the challenged claims means “an allowable fixed angle relative to the neutral bending axis of the joint.” PO Resp. 17–19. Here, I note that the challenged claims themselves define what angles are “allowable.” That is, an allowable angle for the transfixation screw is an angle that directs the screw “through a first position on the first bone and a second position on the second bone.” Ex. 1001, 13:25–26, claim 10.

Regarding Patent Owner’s inclusion of the phrase “relative to the neutral bending axis of the joint” in its proposed construction of “trajectory,” I recognize that the specification makes constant reference to the “neutral bending axis” and its relationship to the trajectory is defined by the disclosed transfixation screw hole. *See, e.g.*, Ex. 1001, 1:46–49 (“the trajectory may be configured to cross a neutral bending axis of the joint once the plate is placed across the joint”); *id.* at 2: 42–46 (“the inner surface of the transfixation screw hole in the plate may direct the transfixation screw along a trajectory that crosses a neutral bending axis of the joint”); *id.* at 5:53–57 (“When transfixation screw 150 is screwed into joint 106 along a trajectory that crosses neutral bending axis 118 (as show in FIG. 2), a ‘tension band’ construct is created that puts transfixation screw 150 under tension when joint 106 flexes.”). I also recognize Dr. Gall’s and Mr. Sommer’s statements

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explaining that the axis of a bone plate may generally approximate the direction of the neutral bending axis of the joint. Ex. 1002 ¶ 128; Ex. 2002 ¶ 93. Furthermore, later dependent claims, when accounting for the precise angles recited by those claims, expressly recite angles measured from the neutral bending axis of the joint. *See, e.g.*, Ex. 1001, 14:13–15, claim 13 (“wherein the trajectory is configured to pass through the joint at a transfixation angle of about 50 degrees measured from the neutral bending axis.”). However, with regard to independent claim 10, I again find that the express recitation of “once the plate is placed across the joint” provides adequate basis for determining how a trajectory is defined, especially in view of Dr. Gall’s and Mr. Sommer’s testimony, summarized above.<sup>3</sup> Ex. 1001, 13:26–27, claim 10; Ex. 1002 ¶ 128; Ex. 2002 ¶ 93.

The dispositive question is whether the recited transfixation screw hole is configured to direct the transfixation screw on a trajectory that is a fixed angle or is configured to allow for “adjustable orientation” based on “a predetermined allowable angular range” such as opening 26 of Slater, identified by Petitioner as the transfixation screw hole. Pet. 26; Ex. 1005, 12:23–25, 11:21–22. Here, I first note the specification does not describe a plate having a hole identified as a transfixation screw hole that would accommodate insertion of a screw at a plurality of angles through the same

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<sup>3</sup> I also note that our express determination of whether a trajectory should be measured from an elongate axis, neutral bending axis of the joint, or otherwise, is unnecessary as such a determination would not affect the outcome of our decision. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting, *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

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hole. Rather, the specification repeatedly describes the disclosed plate system as having a transfixation screw hole where it is the inner surface of that hole that is configured to direct a screw at a trajectory, which, according to Mr. Sommers, is language a person of ordinary skill in the art would understand to describe a degree of precision around a single fixed angle. Ex. 1001, 1:26–45, 2:8–14, 2:42–46; Ex. 2002 ¶¶ 50, 95, 97; PO Resp. 17–19. For example, the specification describes how “increased plate thickness around transfixation screw hole 102 may also enable transfixation screw hole 102 *to be machined* into bone plate 100 *at an angle* relative to the top surface of bone plate 100.” Ex. 1001, 8:54–58 (emphasis added). In other embodiments, the central axis of the inner surface of the transfixation screw hole defines the trajectory. *Id.* at 1:46–47; 6:19–33. By comparison, other holes in the disclosed plates are not disclosed with the same level of effort toward precision when describing the trajectory of a screw. Indeed, the specification even includes a description of an oblong opening such as the one found in Slater, described as compression hole 132 and serves the purpose of tightening bones so as to “to press together at the interface of joint 106.” *Id.* at 8:53–9:26. Taken together, the specification, when read as a whole, describes plates with a transfixation screw hole configured at a single trajectory selected to achieve the functional objectives of the plate, namely, joint fusion, where that single trajectory is preferably between 30 and 70 degrees, and more preferably, 50 degrees. *Id.* at 6:19–33. Petitioner’s fails to direct us to any example or other disclosure to support its alternative interpretation, namely, a plate configured with a transfixation screw hole 102 configured to permit the placement of a screw at a plurality of trajectories or angles.

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Second, other dependent claims support the interpretation of a trajectory configured at a fixed angle. Claim 2, for example, recites that the “central axis of the inner surface of the transfixation screw hole defines the trajectory,” a distinguishing feature as compared to the device in Slater that I will discuss here by way of comparison. Ex. 1001, 12:32–36; *see also id.* at claim 11. Figure 1 of Slater depicts, in phantom, the use of screw 25 that passes through the tibia and terminates in the talus. PO Resp. 10 (citing Ex. 2002 ¶ 55). The hole that screw 25 passes through is oblique<sup>4</sup> and allows the angle of the screw to be modified as the plate is affixed to the ankle joint. *Id.* (citing Ex. 2002, ¶ 56; Ex. 1005, 11:21–22). In other words, the oblong hole of Slater is specifically designed to not have a central axis that defines the screw trajectory. (Ex. 2002, ¶ 98); *see also* Ex. 2002 ¶ 97 (Figure 1 of Slater “does not detail anything at all regarding the structure of [the ‘inner surface’ of the transfixation screw hole], much less demonstrate the hole has an ‘inner surface configured to direct the transfixation screw . . . at a trajectory.’”).

Claim 4 includes an allowable range between 30 and 70 degrees for the trajectory. Claim 4, however, depends from claim 2, and therefore

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<sup>4</sup> It is undisputed that the hole identified by Petitioner as the transfixation screw hole is oblong. As noted by Patent Owner, this hole is described as “slotted,” which means “that at least a portion of the hole towards the inner surface of the plate is oblong in one direction in order to allow the screw 25 to pass through at multiple angles.” PO Resp. 10 (citing Ex. 2002 ¶ 56; Ex. 1005, 24:4–8). Likewise, Dr. Gall recognizes the same hole as the transfixation screw hole of Slater and describes it as an “oblique screw portal allowing for various angles and **the ability to incorporate more joints into the arthrodesis** as required.” Ex. 1002 ¶ 102; Ex. 1005, 16:28–30.



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requires the central axis of the screw hole to define the trajectory of the screw between 30 and 70 degrees. Upon review of this claim structure for the '776 patent, I agree with Patent Owner that a person of ordinary skill in the art would understand that, in the context of the intrinsic record, this means that any given plate is configured at a single trajectory or single fixed angle, and that different plates could have a different fixed angle, with plates having single fixed angles in the range between 30 and 70 degrees. PO Resp. 19 (Ex. 2002 ¶ 95; *see also* Ex. 1001, 6:25–30). Here, I also credit Mr. Sommer's explanation that a person of ordinary skill in the art would understand that to mean that a surgeon would be provided with a kit that includes multiple plates, each one with a single fixed angle of, for example, 50, 55, 60, 65 and 70 degrees. Ex. 2002 ¶ 95; Sur-reply 4.

Moreover, claim 5 further limits the trajectory of claim 4 to “a transfixation angle of about 50 degrees measured from the neutral bending axis.” Ex. 1001, 12, ll. 49–51; *see also id.* at claim 13. Claim 6 further limits claim 1 and requires that “the inner surface of the transfixation screw hole is configured to lockably engage the head of the transfixation screw,” and that engagement of the screw head and screw hole would inherently constrain the configuration of the screw hole to a particular angle. *Id.* at 12, ll. 52–54. Thus, each of dependent claims 2–6, 11, and 13 further limit independent claims 1 and 10 along the lines of a single “trajectory” and are more specifically directed to plates configured with a screw hole that defines a single trajectory.

Finally, while the term “trajectory” used in isolation may not necessarily connote a fixed angle, the assessment here is whether the recitation of an inner surface of a screw configured to direct a screw *at a*

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*trajectory* is describing a fixed angle, and more specifically, describing a screw hole configured to direct a screw at a single trajectory. In view of the claim structure of independent claims 1 and 10, the content of the specification, and testimony of Mr. Sommer's, summarized above, I determine it does. The claims expressly require a transfixation screw hole that itself is "configured to direct the transfixation screw through the transfixation screw hole . . . *at a trajectory*," which in context indicates that a screw hole directs the trajectory of the screw, even if other factors may also influence the trajectory. *Cf.* Reply 3–4. In other words, we agree with Patent Owner that "[a person of ordinary skill in the art] reading [claim 10] in light of the intrinsic record would understand that [the claim language describing the recited screw hole] means that the shape of the inner surface of the transfixation screw hole is such that it guides the screw at a fixed angle." PO Resp. 17; Ex. 2002 ¶ 94.

I recognize Petitioner's argument that "[w]hile Slater's transfixation screw hole allows the transfixation screw to be positioned within a predetermined range, once the screw is threaded into the bone, the screw trajectory, and thus the angle, is fixed," however, I am not persuaded. Reply 12. Petitioner insufficiently explains how the fixation of the angle of the screw trajectory by virtue of being inserted into a bone equates to the claim requirement that the inner surface of the transfixation screw hole directs the screw at a trajectory.

Petitioner's challenge to dependent claim 15 as anticipated by Slater is substantially similar to its analysis of independent claim 10, which relies on Petitioner's predicate analysis on claim 10. *See generally* Pet. That analysis

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suffers from at least the same shortcomings discussed here for independent claim 10 [and claim 1].

In view of the above, I determine that Slater does not disclose “the transfixation screw hole comprising an inner surface configured to direct the transfixation screw . . . at a trajectory.” Slater’s opening 26 is meant to be a variable angle hole and not an opening configured to direct a screw at a particular angle or trajectory. *See* Ex. 1005, 11:19–22 (“an angle within a predetermined allowable angular range”); *see also* Ex. 2003, 65:1–4 (Dr. Gall agreeing that each of the angles depicted by phantom screws shown in Figure 1 of Slater are achieved through the same screw hole 26). Accordingly, for this additional reason, I determine that Petitioner has not demonstrated by a preponderance of evidence that claim 15 is anticipated by Slater.

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Paper 35  
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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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STRYKER CORPORATION and  
WRIGHT MEDICAL TECHNOLOGY, INC.,  
Petitioner,

v.

OSTEOMEDLLC,  
Patent Owner.

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IPR2022-00191  
Patent 9,763,716 B2

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Before SHERIDAN K. SNEDDEN, RICHARD H. MARSCHALL, and  
JAMIE T. WISZ, *Administrative Patent Judges*.

Opinion by the Board filed by *Administrative Patent Judge* SNEDDEN.

Opinion Concurring filed by *Administrative Patent Judge* SNEDDEN.

DECISION  
Final Written Decision  
Determining No Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*

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## I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6. We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 in an *inter partes* review involving Stryker Corporation and Wright Medical Technology, Inc. (collectively, “Petitioner”) and OsteoMed LLC (“Patent Owner”). Based on the record before us, we conclude that Petitioner has not demonstrated, by a preponderance of the evidence, that claims 15 and 21 (“Challenged Claims”) of U.S. Patent No. 9,763,716 B2 (“the ’716 patent,” Ex. 1001) are unpatentable.

### A. Background and Summary

Petitioner filed a Petition to institute *inter partes* review of claims 15 and 21 of the ’716 patent. Paper 2 (“Pet.” or “Petition”). Patent Owner filed a Preliminary Response. Paper 5.

Following institution, Patent Owner filed a Response to the Petition (Paper 17, “PO Resp.”), Petitioner filed a Reply to Patent Owner’s Response (Paper 20, “Reply”), and Patent Owner filed a Sur-Reply (Paper 23, “Sur-Reply”).

On March 1, 2023, the parties presented arguments at an oral hearing. The transcript of the hearing has been entered into the record. Paper 33.

### B. Related Matters

The Petition identifies three other patents as related to the ’716 patent. Pet. 2. Those patents are: U.S. Patent No. 8,529,608 (“the ’608 patent”); U.S. Patent No. 9,351,776 (“the ’776 patent”); and U.S. Patent No. 10,245,085 (“the ’085 patent”). *Id.* The ’608 and ’776 patents issued on grandparent and parent applications, respectively, to the ’716 patent, and the

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'085 patent issued on a child application to the '716 patent. Ex. 1001, code (63); IPR2021-01453 (Exhibit 1001, code (63)).

The four related patents are asserted in two pending lawsuits. Pet. 1–2; Paper 4, 1. Those lawsuits are: *OsteoMed LLC v. Stryker Corporation*, Case No. 1:20-cv-06821 (N.D. Ill.) and *OsteoMed LLC v. Wright Medical Technology, Inc.*, Case No. 1:20-cv-01621 (D. Del.). *Id.*

In addition to this IPR proceeding, other claims of the '716 patent and the related patents are challenged in other matters before the Board. Those matters include: IPR2021-01450 and IPR2022-00189 (challenging claims of the '608 patent); IPR2021-01451 and IPR2022-00190 (challenging claims of the '776 patent); IPR2021-01453 (challenging claims of the '085 patent); and IPR2021-01452 (challenging claims of the '716 patent). Pet. 2.

### *C. The '716 Patent*

The '716 patent issued September 19, 2017, from an application filed May 5, 2016. Ex. 1001, codes (45), (22). The '716 patent claims the priority benefit of an application filed April 28, 2009. *Id.* at 1:7–13.

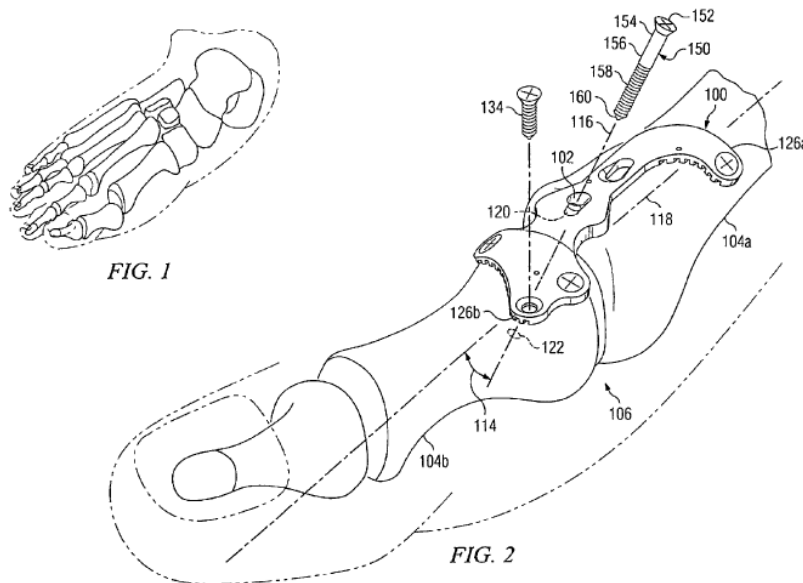
As background, the '716 patent explains, when reconstructing a damaged joint, “a surgeon may need to fuse the bones of the joint together in a configuration that approximates the natural geometry of the joint,” and “[o]ne way to achieve this objective is to attach the bones of the joint to a plate that holds the bones together in alignment with one another while they fuse together.” *Id.* at 1:24–31.

The '716 patent relates to “a device for securing bones together, and more particularly, to a bone plate with a transfixation screw hole.” *Id.* at 1:18–20. The '716 patent describes a plate that includes, *inter alia*, an elongate spine with first and second ends having attachment points for

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securing the plate to first and second bones on, respectively, first and second sides of a joint between the bones. *Id.* at 1:39–45. The plate’s spine also includes a “bridge portion” configured to span the joint, and a “transfixation screw hole disposed along the spine.” *Id.* at 1:45–49. The transfixation screw hole may be configured to direct a transfixation screw such that the screw extends alongside the bridge at a trajectory that passes through a first position on a first bone and a second position on a second bone when the plate is placed across a joint. *Id.* at 1:49–55.

Figures 1 and 2 of the ’716 patent, reproduced below, illustrate various features of an exemplary bone plate, and the plate’s placement across a joint. Figure 1 shows a failed joint in a human foot, and Figure 2 shows a bone plate being used to repair the aforementioned joint.



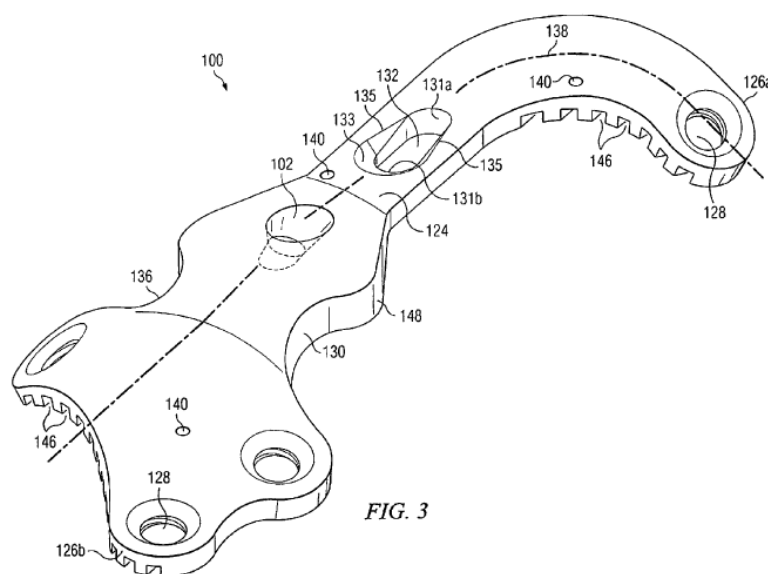
*Id.* at Figs. 1–2. Figure 1 is a perspective view of a human foot and illustrates the bones within the foot, including a failed metatarso-phalangeal joint of the big toe. *Id.* Figure 2 depicts a bone plate (100) being used in



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combination with a transfixation screw (150) to repair the joint (106) between a first bone (104a) and a second bone (104b) when the transfixation screw is screwed through the joint along a trajectory defined by the central axis (116) of transfixation screw hole (102) that crosses neutral bending axis (118) of the joint. Ex. 1001, 4:25–43, 6:7–11, 6:62–67.

Figure 3, reproduced below, is an enlarged isometric view of the top surface of the plate of Figure 2.



*Id.* at Fig. 3. Figure 3 shows plate (100) and various features, including elongate spine (124) having a first end (126a) and a second end (126b), each end with attachment points (128). *Id.* at 7:41–49. The attachment points (128) may be made to accept a bone screw (134, as depicted in Fig. 2) for attaching the first and second ends to first and second bones. *Id.* at 7:53–61. The plate includes bridge portion (130) configured to span a joint between the bones, which bridge portion includes a “thickened section 136 . . . to increase the bending strength” and minimize bending or breaking when load is applied to the joint. *Id.* at 7:48–50, 8:32–36. The plate further includes a

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transfixation screw hole (102) “disposed along the center line 138 of spine 124, immediately adjacent to bridge portion 130.” Ex. 1001, 8:53–58.

According to the ’716 patent, the inner surface of the transfixation screw hole may direct a transfixation screw along a path that passes through a portion of first and second bones and crosses a neutral bending axis of the joint. *Id.* at 2:59–63. The patent explains that “[t]his technical advantage may create a ‘tension band’ construct that enables the transfixation screw to absorb a portion of the mechanical stress that would otherwise be imposed upon the plate above the joint when a load is applied to the joint.” *Id.* at 2:63–67; *see also id.* at 6:7–11 (“When transfixation screw 150 is screwed into joint 106 along a trajectory that crosses neutral bending axis 118 (as show[n] in FIG.2), a ‘tension band’ construct is created that puts transfixation screw 150 under tension when joint 106 flexes.”).

#### *D. Illustrative Claims*

The challenged claims are claims 15 and 21, which depend, respectively, from claims 10 and 16. We reproduce claims 10 and 15 as illustrative below:

10. [10.P] A plate for securing two discrete bones together across an intermediate joint, comprising:

[10.1] an elongate spine having:  
a first end comprising:

at least one fixation point for attaching the first end to a first discrete bone on a first side of a joint; and

a first inner surface configured to substantially conform with a geometry of the first bone;

[10.2] a second end comprising:

at least one fixation point for attaching the second end to a second discrete bone on a second side of the joint; and a second inner surface

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configured to substantially conform with a geometry of the second bone; and  
[10.3] a bridge portion disposed between the first end and the second end; and  
[10.4] a transfixation screw hole disposed along the spine, the transfixation screw hole comprising an inner surface configured to direct a transfixation screw through the transfixation screw hole such that the transfixation screw extends alongside the bridge portion at a trajectory configured to pass through a first position on the first bone and a second position on the second bone, enabling said screw to absorb tensile load when the second bone is loaded permitting transfer of the tensile load through said screw into said bridge,  
[10.5] wherein at least a portion of said bridge portion and said transfixation screw hole has a depth greater than at least a portion of said first and second ends.

Ex. 1001, 13:34–62 (adding indentation and Petitioner’s labels for claim elements in brackets); Pet. 12–13. Independent claim 16 is identical to claim 10, except the final wherein clause recites a screw hole having “a thickness greater than” instead of “a depth greater than.” Ex. 1001, 14:19–48.

15. [15.1] The plate of claim 10, further comprising a first flared hip on a first side of the plate and a second flared hip on a second side of the plate, [15.2] the flared hips comprising two generally parabolic wings extending laterally from the spine and being symmetrically opposed to one another about the transfixation screw hole.

Ex. 1001, 14:13–18 (adding Petitioner’s labels in brackets); Pet. 12. Claim 21 is identical to claim 15 except that claim 21 depends on claim 16 instead of claim 10. Ex. 1001, 14:65–15:3.

#### *E. Prosecution History*

Starting with the ’608 patent’s prosecution history, the Examiner initially rejected “system” and “plate” claims similar to claims appearing in

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the '716 patent for anticipation by Grady (Ex. 1011) and for obviousness based on Grady in view of Strnad (Ex. 1015). Ex. 1004, 173–178.<sup>1</sup> At that time, the Examiner apparently interpreted a “joint” as recited in the claims as including a “fracture” within a single bone, and also found that Grady’s system was “capable of securing two bone portions together” across a joint. *Id.* at 175. Applicant responded by arguing, *inter alia*, that Grady’s bone plate was dimensioned and configured for “fixation of ***two portions of a single bone***, which has been fractured,” and did not teach a transfixation screw hole configured to direct the screw so that it “extends ***at a trajectory configured to pass through two bones*** once the plate is placed across the joint” as claimed. *Id.* at 498.

The Examiner responded by maintaining the rejections, characterizing Applicant’s arguments as based on an “intended use” of the claimed subject matter without a showing of a “structural difference” between the claims and the prior art. *Id.* at 227–234 (reiterating that Grady’s plate is “capable of” performing the intended use).

Through additional back-and-forth between the Applicant and the Examiner, including multiple claim amendments, the claims were ultimately allowed. The claims were initially amended to require first and second inner surfaces of the system/plate conform with a geometry of a first and second bone. *Id.* at 246, 249. The Examiner, however, determined that such amendment did not go far enough in distinguishing the claims *structurally* over Grady. *Id.* at 267–268 (explaining that “if the applicant were to add language to recite the **structural differences** between the claimed invention

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<sup>1</sup> These page numbers refer to the page numbers added to the exhibit copy, not the original pagination, nor the Bates numbering on the exhibit.

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and the prior art, it would overcome the rejection of record.”). Applicant then amended the claims further to recite: (i) that first and second bones to which the plate/system are attached are “discrete” bones and the joint was an “intermediate” joint between them; (ii) that the bridge portion included a “thickness greater” than a portion of the first or second ends; and (iii) that the transfixation screw and screw hole are configured in such a way as to transfer tensile load from the second discrete bone through the screw and into the bridge portion. *Id.* at 289–291, 296–297 (arguing these amended features are not disclosed in Grady or Strnad). The Examiner subsequently allowed the claims without substantive comment. *Id.* at 305–309.

Prosecution of the related ’776 and ’716 patents included non-statutory double patenting rejections (overcome via terminal disclaimer), but no prior art rejections before allowance. *See generally* Exs. 1017 and 1018. The prosecution of the ’776 patent also included rejections for indefiniteness and written description that were overcome by minor claim amendment and cancellation of certain claims. Ex. 1017, 179, 197–198, 207.

#### *F. Asserted Grounds*

Petitioner asserts that claims 15 and 21 are unpatentable based on the following grounds:

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §</b>	<b>Reference(s)</b>
15, 21	102(b) <sup>2</sup>	Slater <sup>3</sup>

<sup>2</sup> The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Based on the putative effective filing date of the ’716 patent, we apply the pre-AIA versions of §§ 102 and 103.

<sup>3</sup> Slater, WO 2007/131287 A1, published Nov. 22, 2007 (Ex. 1005, “Slater”).

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Claim(s) Challenged	35 U.S.C. §	Reference(s)
15, 21	103(a)	Falkner, <sup>4</sup> Duncan <sup>5</sup>

Petitioner also relies upon the Declarations of Dr. Kenneth A. Gall (Ex. 1002 and Ex. 1028) and Dr. George B. Holmes, Jr. (Ex. 1029) to support its contentions.

Patent Owner relies upon the Declaration of Mr. Mark B. Sommers (Ex. 2002).

## II. ANALYSIS

### A. Claim Construction

We interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b) (2020). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

Both parties contend that the ordinary and customary meaning of the claims controls here. Pet. 14–15; PO Resp. 15. Petitioner “clarifies that the claim term ‘flared hips’ from claims 15 and 21 means ‘a widened section of the bone plate.’” Pet. 14–15 (citing Ex. 1001, 10:29–30 (“Flared hips may be generally defined by a widened section of bone plate 100.”)). Petitioner’s clarification about the term “flared hips” is not needed. Claims 15 and 21 further recite, *inter alia*, that the flared hips comprise a pair of “generally

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<sup>4</sup> Falkner, US 2005/0171544 A1, published Aug. 4, 2005 (Ex. 1006, “Falkner”).

<sup>5</sup> Duncan et al., US 2009/0228048 A1, published Sept. 10, 2009 (Ex. 1010, “Duncan”).

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parabolic wings extending laterally from the spine,” which provides added clarity about the shape and orientation of the flared hips.

Patent Owner contends that the preamble of independent claims 10 and 16 “is limiting, and requires a plate for securing two discrete bones together across an intermediate joint.” PO Resp. 15 (citing Ex. 1001, 13:35–35, 14:19–20). Patent Owner also contends that the term “trajectory” as used in the Challenged Claims “means a fixed angle relative to the neutral bending axis of the joint.” *Id.* at 16.

Having considered the parties’ positions and evidence of record, we determine that no express construction of any claim term is necessary to determine whether to institute *inter partes* review. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). To the extent further discussion of the meaning of any claim term is necessary to our decision, we provide that discussion below in our analysis of the asserted grounds of unpatentability.

#### *B. Level of Ordinary Skill in the Art*

The level of ordinary skill in the art usually is evidenced by the prior art references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

Petitioner proposes that a person of ordinary skill in the art (“POSA” or “POSITA”) at the time of the invention

would be an individual having at least a bachelor’s degree in engineering with at least two years of experience in the field, such as experience with the design of surgical implants, or a

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clinical practitioner with a medical degree and at least two years of experience as an orthopedic surgeon.

Pet. 14 (citing Ex. 1002 ¶¶ 35–39). Patent Owner does not dispute Petitioner’s proposal about the POSA’s qualifications. PO Resp. 21–22.

For this Decision, we adopt and apply Petitioner’s proposal for the POSA level, which does not appear to be inconsistent with the level of skill reflected in the asserted prior art.

*C. Summary of Cited Prior Art*

*1. Slater (Ex. 1005)*

Slater is an international patent application published on November 22, 2007. Ex. 1005, code (43). Slater relates to “prosthetic devices and more particularly relates to an ankle fusion plate for fusion of the anterior ankle.” *Id.* at 2:6–7.<sup>6</sup> Although Slater’s plate is “described with reference to its application to ankle fusion,” Slater discloses that “it will be appreciated by persons skilled in the art that the invention may be applied to the repair/fusion of other bones requiring axial alignment.” *Id.* at 7:34–8:2.

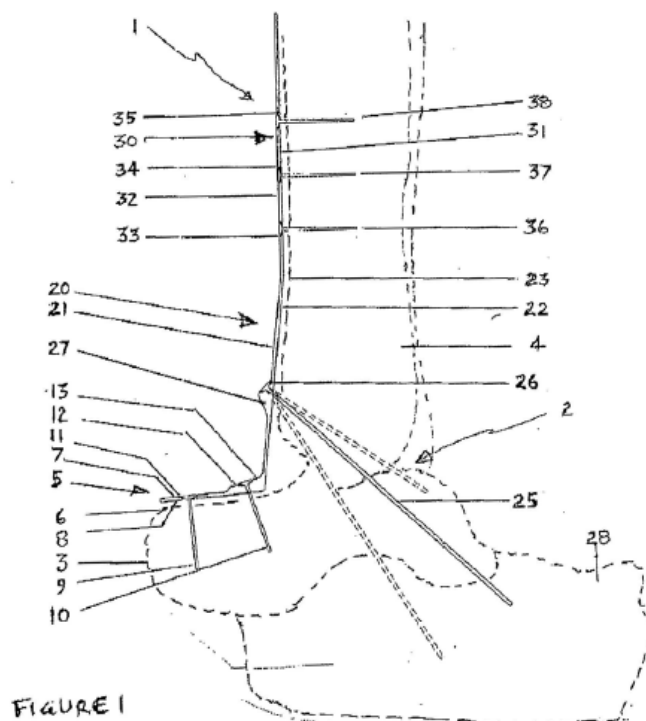
Figure 1 of Slater, reproduced below, shows a side elevation of an example plate attached via fixation screws to an abbreviated ankle joint.

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<sup>6</sup> These page number citations in Slater are to the page numbers added to the exhibit copy, and the applicable line numbers on those pages. For other asserted prior art, however, we may cite to the numbered paragraphs within the reference, or to the column and line numbers.



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Ex. 1005, Fig. 1. Slater's Figure 1, above, shows plate (1) attached to an ankle joint (2) opposing the talus bone (3) and the tibial bone (4). *Id.* at 12:2–4. Figure 1 depicts plate (1) having inner (22) and outer (21) surfaces, with inner surface (22) opposing the anterior surface (23) of the tibia (4). *Id.* at 12:18–19. Portion (30) of the plate includes openings (33, 34, 35) for receiving fastening screws (36, 37, 38), which engage tibia (4). *Id.* at 12:28–31. Portion (5) of the plate has inner (8) and outer (7) surfaces that oppose surface (6) of the talus bone (3) for fixation thereto by screws (9, 10), which pass through openings (11, 12) and into the talus. *Id.* at 12:5–10.

In addition, portion (20) of Figure 1's plate resides between portions (5) and (30), and includes opening (26) in formation (27), for receiving fixation screw (25). Ex. 1005, 12:18–22. According to Slater, "[f]ormation 27 is configured so that screw 25 is implanted at an angle within a predetermined allowable angular range . . . preferably within a 40 degree

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arc.” *Id.* at 12:21–23; *see also id.* at Fig. 2 (front elevation view of plate 1, showing another view of plate portions (20, 30), openings (33, 34, 35) and formation (27) relative to the underlying anterior tibia (4) and talus (3) to which the plate is attached).

Slater discloses that “[s]crew 25 engages tibia 4, talus 3, and calcaneus 28 [(i.e., heal bone)] effectively providing three points of fixation according to this embodiment.” *Id.* at 12:23–25. Continuing, Slater teaches that, “[a]s may be seen in figure 1 the screws are placed in a particular orientation and required angle to the joint/s required for arthrodesis,” and “[t]his is also necessary to achieve maximal compression of the fusion site/s.” *Id.* at 13:3–5.

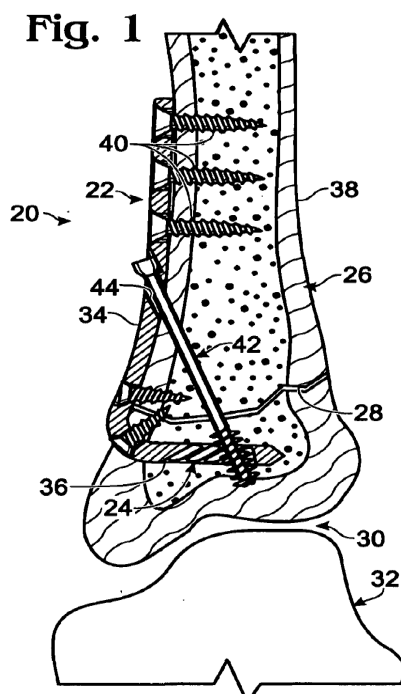
In summarizing features of its invention, Slater discloses that the plate’s depth may change at different locations and “[p]referably, the depth at the beginning and [sic, and] end points of the L shaped contour over the ankle joint . . . will be at its [sic] maximum thickness.” *Id.* at 9:31–34; *see also id.* at 10:3–6 (“The plate will taper at at least one but preferably two different points of the plate . . . [and] [t]he desired effect is for the plate to taper in and decrease in thickness proximally.”). Slater further teaches that the plate “will preferably resemble and conform to the typical geometry of the anatomical region. . . . Preferably, the plates are configured to generally conform to the anatomic contours of the ankle joint.” *Id.* at 10:11–15.

## 2. *Falkner (Ex. 1006)*

Falkner is a U.S. patent application that published August 4, 2005. Ex. 1006, code (43). Falkner relates to systems for fixing bones using bone plates having toothed apertures for retaining fasteners. *Id.* ¶ 7.

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Falkner's Figure 1, reproduced below, is a cross-sectional view of an example bone plate including a toothed aperture with the plate secured to a fractured bone. *Id.* ¶ 8.



*Id.* at Fig. 1. Falkner's Figure 1 shows bone plate (22) with toothed aperture (24) attached to the tibia (26) and spanning fracture (28). *Id.* ¶ 21. As illustrated, external plate portion (34) is secured to the tibia with a suitable fastener, such as bone screw (40), and internal plate portion (36) is disposed substantially interior to the tibia. *Id.* ¶¶ 23–24. The internal plate portion (36) defines a toothed aperture (24) configured to receive threaded fastener or screw (42) inserted through opening (44). *Id.* ¶ 24. According to Falkner, “[w]ith the head of the screw engaged with the external plate portion, further rotation of screw 42 and thus further advancement of threaded region . . . into/through the aperture applies a tension to the plate.” *Id.* ¶ 71; *see also id.* at Fig. 2 (showing a more detailed view of toothed aperture (24)).

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Although the above embodiment is shown attached to a single bone and spanning a fracture in that bone, Falkner discloses that a plate may be used to span other bone discontinuities—including discontinuities between more than one bone. *Id.* ¶¶ 27–28 (disclosing that discontinuities include fractures (breaks in bones) and joints). Falkner discloses that “[i]n other examples, plate 22 may span a joint, such as a joint 30 between tibia 26 and talus 32, among others.” *Id.* ¶ 21.

Falkner teaches that the inner and outer surfaces of a bone plate “may be generally complementary in contour to the bone surface.” *Id.* ¶ 34. Moreover, Falkner discloses, “[t]he thickness of the plates may vary between plates and/or within plates, according to the intended use.” *Id.* ¶ 35.

3. *Duncan (Ex. 1010)*

Duncan is a U.S. patent application filed March 9, 2009, which published on September 10, 2009. Ex. 1010, codes (22), (43). Duncan relates to a joint fixation system (i.e., plate), especially for the joints of the hand. *Id.* at Abstr. Figure 2 of Duncan is reproduced below.

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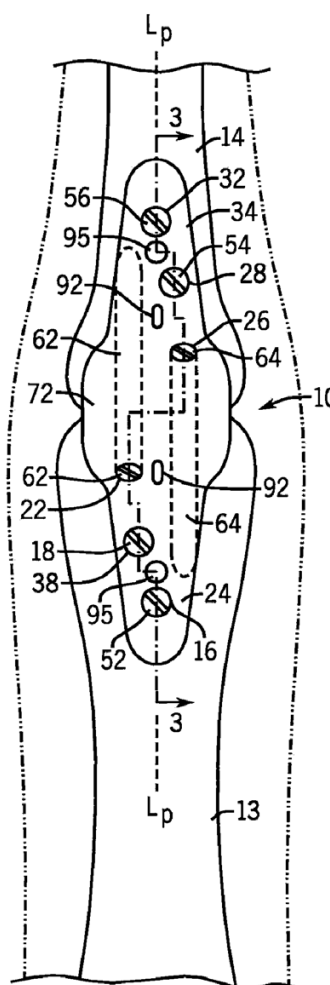


FIG. 2

*Id.* at Fig. 2. Figure 2, above, is an antero-posterior view of fixation system (10) secured to the proximal interphalangeal joint of a finger. *Id.* ¶ 32.

As shown above, Duncan teaches a joint fixation plate that is widened at an intermediate section (72). *Id.* ¶ 45. This intermediate section is located between the plate's proximal section (24) and distal section (34), and is designed such that screws (64, 62) do not interfere with each other when the screws are inserted, respectively, into proximal phalanx (13) and intermediate phalanx (14). *Id.*

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*D. Ground 1: Anticipation by Slater*

Petitioner contends that claims 15 and 21 are anticipated by Slater. Pet. 19–33. Petitioner begins with its analysis of independent claims 10 and 16 (*id.* at 19–31), from which claims 15 and 21 depend, respectively, and then addresses the limitations added by dependent claims 15 and 21 (*id.* at 31–33).

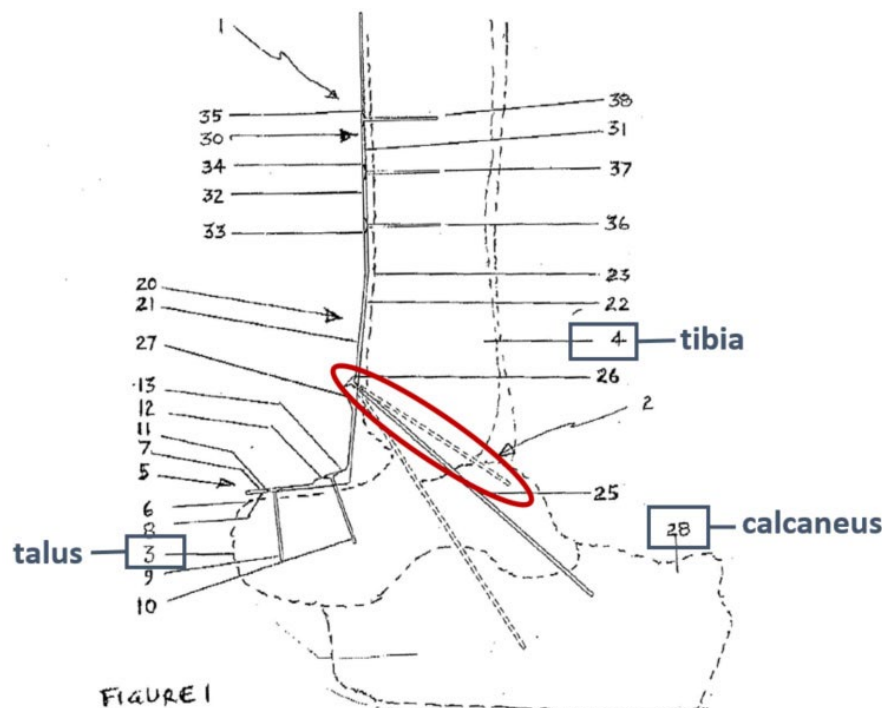
Patent Owner raises multiple counterarguments. PO Resp. 23–39.

As do the parties, our discussion below focuses largely on claim 10. *See, e.g.*, Pet. 20–31 (Petitioner characterizing the elements of claims 10 and 16 as being “identical” except that claim 10 uses the term “depth” whereas claim 16 uses the term “thickness”). Having considered the parties’ positions and evidence of record, we determine that Petitioner has not demonstrated by a preponderance of evidence that claims 15 and 21 are anticipated by Slater. Our analysis follows.

*1. Petitioner’s Contentions*

Petitioner argues that, if claim 10’s “preamble is limiting, Slater [discloses] a plate for securing two discrete bones together across an intermediate joint.” Pet. 20. In support, Petitioner provides an annotated version of Slater’s Figure 1, reproduced below.

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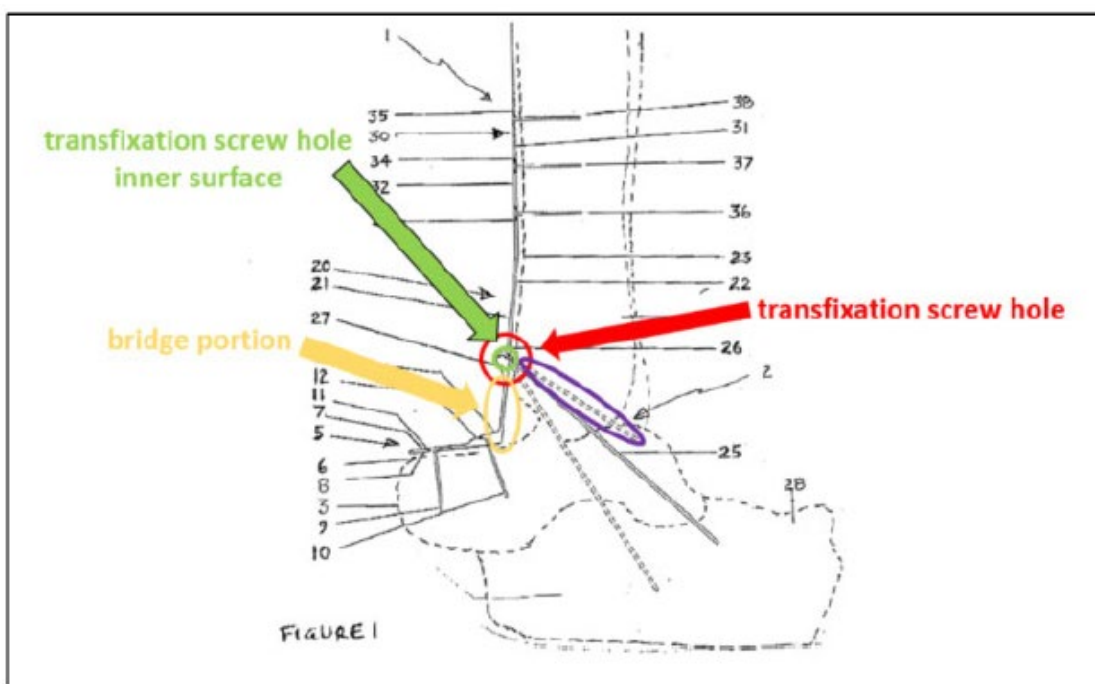
*Id.* at 21. Petitioner's annotated version of Figure 1, above, adds boxes and text to identify the tibia, talus, and calcaneus, and also includes a red oval around one of three screw paths shown in the figure. *Id.* Petitioner contends that Figure 1 shows an embodiment where the fusion plate is secured to three discrete bones (tibia, talus, and calcaneus) across two joints between those bones, and also an embodiment where the plate is secured to only two bones (tibia and talus) across one joint between those bones—the latter evidenced by the screw path in the red oval noted above. *Id.* Petitioner supports this interpretation of Slater with Dr. Gall's testimony. Ex. 1002 ¶ 108.

Petitioner further contends that Slater discloses claim 10's elongate spine and first and second ends, as well as a bridge portion between the ends that has a depth (or thickness) greater than the first and/or second end

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portions. Pet. 21–26 (citing Ex. 1002 ¶¶ 109–114). Petitioner contends that those limitations are disclosed in, for example, Slater’s Figure 1 and the features depicted therein. *Id.*

Petitioner also contends that Slater discloses claim 10’s transfixation screw hole and transfixation screw limitations, labeled limitation 10.4 by Petitioner. *Id.* at 26–29. Petitioner cites Slater’s Figure 1, with further annotations, as reproduced below.



*Id.* at 28. Petitioner’s annotation to Figure 1, above, identifies transfixation screw hole (with red arrow and circle), inner surface of that screw hole (green arrow and circle), the plate’s bridge portion (yellow arrow and oval) and the two-bone screw path discussed above (here, shown inside purple oval). *Id.* (citing Ex. 1002 ¶ 116). According to Petitioner, “Figure 1 shows three separate exemplary angles for transfixation screw 25, including one example where the screw 25 passes through a first position on a first discrete



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bone (tibia 4) and a second position on a second discrete bone (talus 3).”

*Id.*; Ex. 1005, Fig. 1.

According to Petitioner, when fixation screw (25) advances through opening (26) into the talus at an angle as shown, the second bone (talus) is loaded relative to the first bone (tibia) and tensile load is transferred from the talus through the screw into the screw head and plate’s bridge portion as claimed. *Id.* at 29. Petitioner explains that “[t]his transfer occurs because the threads on the screw and the portion of the screw head that abuts the inner surface of the screw hole act essentially as a vise to the second bone and the plate, with the first bone held in between.” *Id.* Petitioner provides testimony from Dr. Gall to support this understanding of Slater’s teachings and the functionality of Slater’s plate when fixed to the tibia and talus as shown. *Id.* (citing Ex. 1002 ¶ 117).

Petitioner next addresses claim 10’s recitation of “wherein at least a portion of said bridge portion and said transfixation screw hole has a depth greater than at least a portion of said first and second ends,” which Petitioner labels as limitation 10.5. Pet. 29–31. According to Petitioner, a POSA would understand “depth” as meaning “thickness”—a term that appears repeatedly in the patent. *Id.* (citing Ex. 1001, 8:32–52).<sup>7</sup> Petitioner contends that Slater uses the terms depth and thickness interchangeably and otherwise discloses limitation 10.5. *Id.* at 30 (citing, *inter alia*, disclosure in Slater that the plate should have “maximum thickness” at the region where highest loading will occur in normal use); Ex. 1005, 15:19–23; *see also id.* at 9:25–

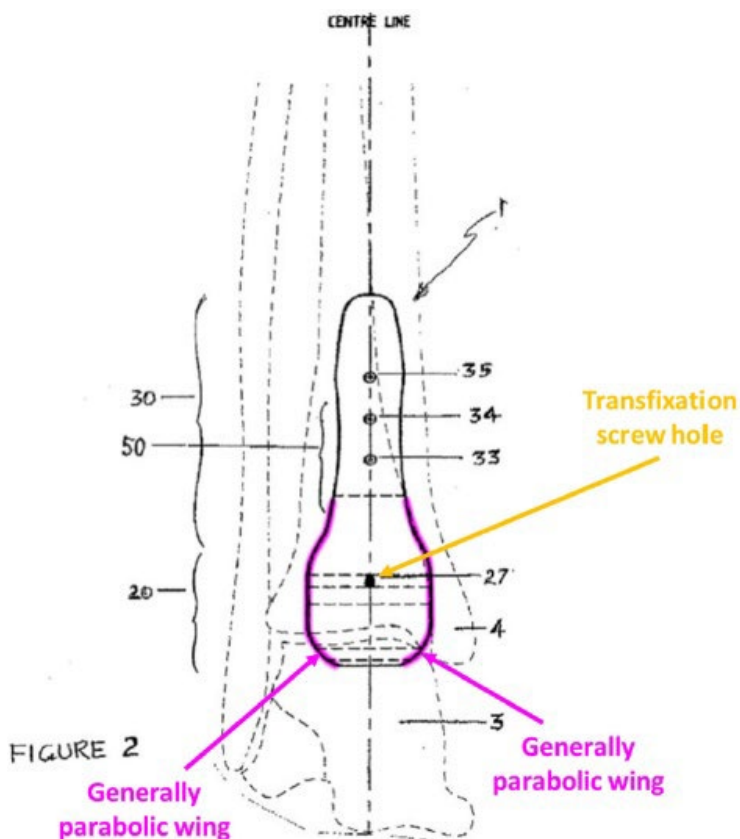
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<sup>7</sup> Independent claim 16 is very similar to claim 10 and includes the phrase “*thickness* greater than at least a portion” for the corresponding limitation of claim 10. Ex. 1001, 14:45–48 (emphasis added).

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26 (disclosing that portions of the plate at the plate extremity are thinner),  
 9:32–10:6; Ex. 1002 ¶ 118.

Altogether, Petitioner argues that Slater discloses every limitation of claim 10, and Petitioner then turns to dependent claim 15. Pet. 31–33. According to Petitioner, Slater also describes a bone plate with flared hips comprising two generally parabolic wings as claimed (labeled limitations 15.1 and 15.2 by Petitioner). *Id.* Petitioner provides an annotated version of Slater's Figure 2, reproduced below.



*Id.* at 32–33. Figure 2, above, is a front elevation view of Slater's plate (the plate as otherwise depicted in a side elevation in Figure 1) and shows the plate oriented for placement on the underlying tibia (4) and talus (3); Petitioner's annotation shows "Generally parabolic wing[s]" (labeled with purple arrows and highlighting) on the lower left and right sides of the plate,

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extending laterally on opposite sides of the transfixation screw hole (indicated by yellow arrow). *Id.*; Ex. 1002 ¶¶ 122–124, 138.

## 2. *Patent Owner's Response*

Patent Owner contends that “nothing in Slater expressly or inherently discloses transferring the tensile load from the second bone through the fixation screw head and into the bridge portion of the plate.” PO Resp. 36. Specifically, Patent Owner contends that Petitioner and Dr. Gall improperly assume that Slater discloses a “vise” configuration to transfer tensile load from the second bone, through the screw and into the bridge portion. *See id.* According to Patent Owner, and its declarant Mr. Sommers, Dr. Gall’s assumption depends on the assumption that the threads of Slater’s screw 70 would only engage the second bone (the talus) in Slater’s two-bone embodiment, but Slater lacks any disclosure to support this assumption. *See id.* at 36–37 (citing Ex. 2002 ¶¶ 106–107; Ex. 2003, 44:21–45:15). Patent Owner argues that Slater does not expressly or inherently disclose Petitioner’s “vise” construct, and that Slater fails to disclose how an undisclosed embodiment using the vise approach would transfer tensile load. *Id.* (citing Ex. 1005, 20:14–16; Ex. 2002 ¶ 108). Patent Owner further contends that Dr. Gall’s opinion lacks citations of support to Slater, and any reliance on Slater’s finite element analysis lacks support because the test data does not state how the transfixation screw was affixed or loaded, or how many bones it penetrated. *Id.* at 37–39 (citing Ex. 1002 ¶¶ 117, 182; Ex. 2002 ¶¶ 111–116; Ex. 2003, 92:24–93:7).

## 3. *Petitioner's Reply*

Petitioner responds that Slater discloses the “vise” configuration because it uses a lag screw “through an angled formation in the bone plate to

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cross a joint or joints where the screw head is in ‘cooperation’ with the screw hole,” creating a well-known “lag effect” to compress bone parts and absorb tensile load. Pet. Reply 13–14 (citing Ex. 1002 ¶¶ 117, 135; Ex. 1005, 5:28–6:10, 6:18–28, 12:32–13:3, 19:25–26, 22:13–18, 27:11–17; Ex. 1028 ¶¶ 33–42; Ex. 1031, 68:17–70:3, 106:19–107:17; Ex. 2003, 46:23–48:4). Petitioner argues that Mr. Sommers conceded that you only want threads in the second bone, and described transfer of tensile load in the ’716 patent in the same manner that Dr. Gall describes Slater transfers tensile load. *Id.* at 14–15 (citing Ex. 1002 ¶¶ 117, 135; Ex. 1028 ¶¶ 33–43; Ex. 1031, 67:23–68:7, 74:6–25, 77:14–22). Petitioner also argues that “Slater describes in-vivo studies that confirm tensile load is transferred from the bone to the screw and to the bone plate.” *Id.* at 15 (citing Ex. 1005, 17:14–20:26; Ex. 2003, 92:17–93:7; Ex. 1028 ¶¶ 44–45). According to Petitioner, Slater’s testing simulated in vivo loading conditions and show that “at least some tensile load is necessarily distributed from the angled screw formation to the bridge portion.” *Id.* (citing Ex. 1005, 17:20–21, 19:1–6; Ex. 1028 ¶¶ 45–46; Ex. 1031, 67:23–68:7, 68:18–24, 74:6–25; Ex. 1040).

#### 4. Analysis

Independent claim 10 recites

a transfixation screw hole disposed along the spine, the transfixation screw hole comprising an inner surface configured to direct a transfixation screw through the transfixation screw hole such that the transfixation screw extends alongside the bridge portion at a trajectory configured to pass through a first position on the first bone and a second position on the second bone, *enabling said screw to absorb tensile load when the second bone is loaded permitting transfer of the tensile load through said screw into said bridge.*

Ex. 1001, 13:50–59 (emphasis added). Independent claim 16 recites

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a transfixation screw hole disposed along the spine, the transfixation screw hole comprising an inner surface configured to direct a transfixation screw through the transfixation screw hole such that the transfixation screw extends alongside the bridge portion at a trajectory configured to pass through a first position on the first bone and a second position on the second bone, *enabling said screw to absorb tensile load when the second bone is loaded permitting transfer of the tensile load through said screw into said bridge.*

*Id.* at 14:36–45 (emphasis added). We will refer to these limitations collectively as the “transfer of tensile load” limitations. The parties dispute whether Slater expressly or inherently discloses these limitations.

We first address Petitioner’s argument that Slater discloses a “wise” configuration, which relies on Petitioner’s argument that Slater uses a lag screw with threads on its end that only engage the second bone in Slater’s two-bone configuration. *See* Pet. 26–29; Reply 13–15. We are not persuaded by Petitioner’s argument because Slater does not expressly or inherently disclose how its lag screw threads interact with the first and second bone. Slater’s Figure 4 “shows an elevation view of a second screw type 70” having “a longer shank to increase depth of penetration and has an abbreviated threaded portion to allow the majority of the shank to slide through aligned tibial and talus screw holes finally anchoring in the calcaneus bone.” Ex. 1005, 12:32–13:3. This description of screw type 70 in the *three*-bone configuration does not state that the screw *only* engages the third bone, the calcaneus bone, and describes the “majority of the shank” as “slid[ing] through” holes in the first two bones without stating that none of the threads engage a portion of, for example, the end of the second bone adjacent the third bone. *See id.* More importantly, even if this portion of Slater describes a *three*-bone embodiment where the threads only engage the

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third bone, Slater provides insufficient support for Petitioner's position that the threads of screw type 70 only engage the second bone in Slater's *two-bone* embodiment, which Petitioner relies on as the anticipatory embodiment of Slater. *See* Pet. 21; Ex. 1002 ¶ 108 (arguing that Slater's Figure 1 shows two-bone embodiment). Slater contains no details on this aspect of its alternative two-bone embodiment, such that the threads of the screw may engage the end of the first bone adjacent the second bone and still provide satisfactory results. At best, Petitioner and Dr. Gall's related testimony establish that it would have been desirable, and perhaps obvious, to have the threads of screw type 70 only engage the second bone in Slater's two-bone embodiment to create a vise-like configuration that transfers tensile load as claimed, but that does not establish that Slater expressly or inherently discloses such an embodiment to satisfy the anticipation standard.

We next address Petitioner's reliance on Slater's finite element analysis tests. *See* Reply 15. Petitioner did not rely on this aspect of Slater in the Petition, and raised the argument for the first time in Reply. *Compare* Pet. 26, *with* Reply 15; Sur-Reply 8. Setting aside the propriety of failing to rely on this aspect of Slater in the Petition, we are not persuaded by Petitioner's argument and evidence for two reasons.

First, Petitioner appears to still rely on its argument that Slater discloses a "vise" configuration, and argues that the testing confirms the transfer of tensile load. *See* Reply 13–14 (relying on "vise" argument), 15 ("Slater describes in-vivo studies that confirm tensile load is transferred from the bone to the screw and to the bone plate."). Petitioner does not appear to argue that even if we find that Slater does not disclose the "vise" configuration and does not necessarily disclose screw threads that only

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engage the second bone, that the testing alone shows that Slater discloses the limitation. Reply 15. Accordingly, we do not find the testing argument persuasive due its link to arguments we find unpersuasive for the reasons discussed above.

Second, Patent Owner correctly points out that Slater provides inadequate information to conclude that the testing results apply to Slater's two-bone configuration such that we can conclude that Slater's two-bone embodiment results in the claimed transfer of tensile load to the plate's bridge. *See* PO Resp. 36–38 (citing Ex. 1002 ¶¶ 117; Ex. 2002 ¶¶ 105–107; Ex. 2003, 44:21–45:15). Slater's tests merely simulate the response of its plate to certain loads, and do not purport to show actual loading of the plate on a patient in either the three-bone or two-bone embodiments. Ex. 1005, 18:14–23 (referring to analysis of simulated in-vivo performance and “anticipated loadings” of the plate). Slater also emphasizes that the simulations only apply to “a plate of the particular type and geometry tested” and that “plates with different geometry and dimension . . . may result in different measured loadings and plate response” and “will be likely to have different load capacity results.” *Id.* at 21:13–23. Based on the lack of detail as to how Slater's simulations would apply to its two-bone embodiment, and Slater's warning that the simulated results only apply to the specific plate tested, we agree with Patent Owner that Slater's simulated testing does not establish that Slater expressly or inherently discloses the transfer of tensile load limitations in claims 10 and 16.

Finally, for similar reasons, we find the testimony of Patent Owner's declarant Mr. Sommers more credible and persuasive than the testimony of Petitioner's declarant Dr. Gall. For example, Dr. Gall opines that Slater

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discloses a vise configuration, but fails to point to any portion of Slater disclosing that configuration with respect to the two-bone embodiment. *See* Ex. 1002 ¶ 117; Ex. 1027 ¶¶ 33–46. Again, this testimony may establish the desirability of such a configuration and that one of ordinary skill in the art, when using Slater’s plate, may do so in the manner Dr. Gall proposes, but that does not establish that Slater expressly or inherently discloses a vise-like configuration due to threaded engagement with only the second bone in Slater’s two-bone embodiment. We view the testimony of Mr. Sommers as more credible because it more accurately tracks Slater’s disclosures. *See* Ex. 2002 ¶¶ 81–82 (opining that Slater “does not describe whether there would also be threads” in the second of the three bones in the three-bone embodiment, in practice the threads may engage multiple bones, and Slater does not illustrate or describe how the screw would be used on a two-bone configuration), 75, 105–116 (opining that Slater fails to disclose the transfer of tensile load limitations).<sup>8</sup>

Based on the foregoing, we find that Petitioner has not established that Slater expressly or inherently discloses the transfer of tensile load limitations in claims 10 and 16, and, therefore does not prove, by a preponderance of the evidence, that Slater discloses each element of either of claim 10 or 16.

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<sup>8</sup> We are also unpersuaded by Petitioner’s arguments based on the alleged similarity between the description Mr. Sommers provides of how the ’716 patent shows the transfer of tensile load and Dr. Gall’s description of how Slater transfers tensile load. *See* Reply 14–15. It is hardly surprising, and largely irrelevant, that Petitioner’s declarant would describe the prior art in a manner consistent with the Patent Owner or its declarant’s description of the how the challenged patent works. That similarity alone does not establish that the prior art expressly or inherently discloses the limitation in question.



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Petitioner’s challenge to dependent claims 15 and 21 as anticipated by Slater is substantially similar to its analysis of independent claims 10 and 16, which relies on Petitioner’s predicate analysis on the independent claims. Pet. 31–33. Accordingly, we determine that Petitioner has not demonstrated by a preponderance of evidence that claims 15 and 21 are anticipated by Slater.

*E. Ground 2: Obviousness based on Falkner and Duncan*

Petitioner contends that dependent claims 15 and 21 would have been obvious over the combination of Falkner and Duncan. Pet. 33–48. As with Ground 1, Petitioner begins with a combined analysis of independent claims 10 and 16 before moving to the challenged dependent claims. *Id.* at 33–43 (claims 10 and 16), 43–48 (claims 15 and 21).

Patent Owner raises multiple counterarguments. PO Resp. 39–49.

Having considered the parties’ positions and evidence of record, we determine that Petitioner has not demonstrated by a preponderance of evidence that claims 15 and 21 would have been obvious over Falkner and Duncan. Our analysis follows.

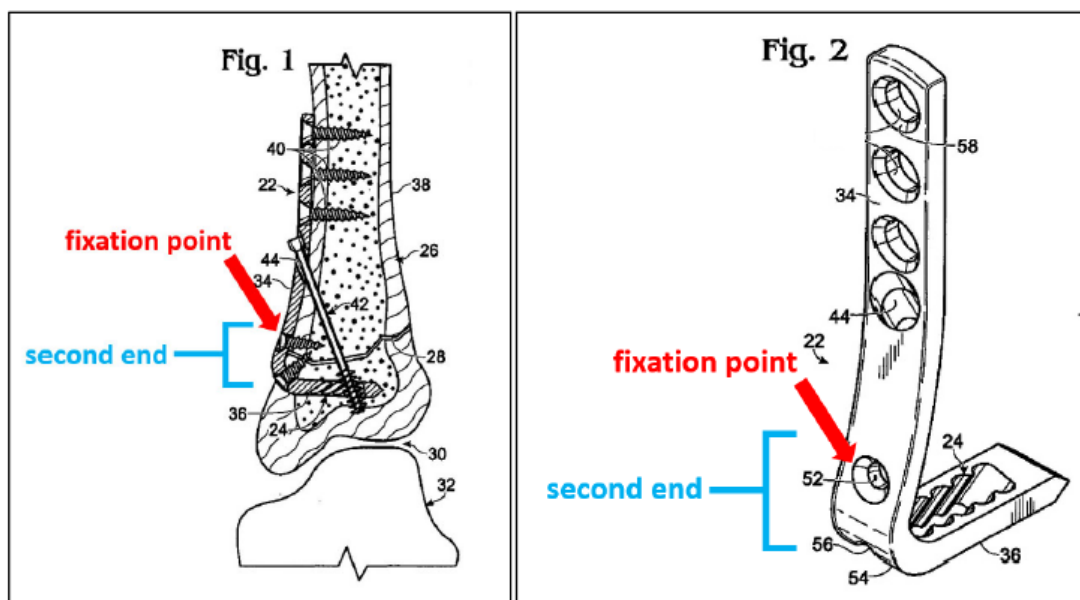
*1. Petitioner’s Contentions*

Petitioner contends that Falkner discloses the preamble and every other element of claim 10. Pet. 33–34. According to Petitioner, although Falkner’s Figure 1 shows a plate for fixing a single fractured bone, Falkner discloses that its bone plates may be used for any suitable “bone(s)” to fix fractures or other bone discontinuities. Ex. 1006 ¶¶ 21, 27–29. Petitioner cites Falkner’s disclosure that, “[i]n other examples, plate 22 may span a joint, such as joint 30 between tibia 26 and talus 32, among others.” *Id.* ¶ 21.

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In a scenario where Falkner's plate spans the ankle joint, Petitioner contends that "plate 22 would be placed across joint 30 and bone screws 40 may be placed into first discrete bone (tibia 26) through the openings 50 at the first end of the plate 22." Pet. 35 (citing Ex. 1002 ¶¶ 143, 166). And, Petitioner argues, "the first inner surface [of the plate] would be configured to substantially conform with a geometry of the first discrete bone (tibia 26)." *Id.* at 36 (citing Ex. 1006 ¶¶ 23, 34; Ex. 1002 ¶ 144). According to Petitioner, this configuration would meet claim 10's element 10.1 "elongate spine" and "first end" limitations. *Id.* at 34–36.

For claim 10's "second end" limitations (labeled 10.2 by Petitioner), Petitioner cites to Figures 1 and 2 of Falkner (with annotations) as produced below.



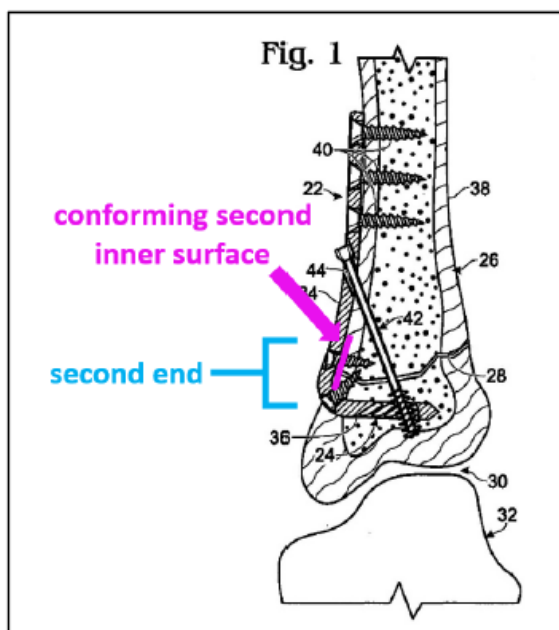
Pet. 37 (citing Ex. 1006, Figs. 1–2). Petitioner's annotated version of Falkner's Figure 1 above shows a cross-sectional view of bone plate 22 secured to a single bone (tibia, 26), with external plate portion (34) secured to the tibia's external surface and a second (internal) plate portion (36)

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inserted within the tibia just below fracture (28). *Id.* Petitioner’s annotated version of Figure 2 is an isolated perspective view of the same plate further showing the plate’s general “L” shape. *Id.* In both figures, Petitioner adds a blue bracket at a segment of external plate portion (36) encompassing a segment at or just above the curve of the L-shaped bracket, which bracketed segment Petitioner names the “second end.” *Id.* Petitioner also annotates opening (52) in both figures and, with red arrow and text, names that opening a “fixation point.” *Id.*

With that context in mind, Petitioner then argues that, “[i]f the Falkner plate was used to span a joint between tibia 26 and talus 32 . . . the plate 22 would be placed across the joint 30. . . and a bone screw 40 may be placed into the second discrete bone . . . (talus 32) through the opening 52 at the second end of the plate 22.” *Id.* at 37–38 (citing Ex. 1002 ¶ 145). And, referencing another annotated version of Figure 1 (reproduced below), Petitioner contends that “the second inner surface would be configured to substantially conform with a geometry of the second bone (talus 32).” *Id.* at 38 (citing Ex. 1002 ¶ 146).

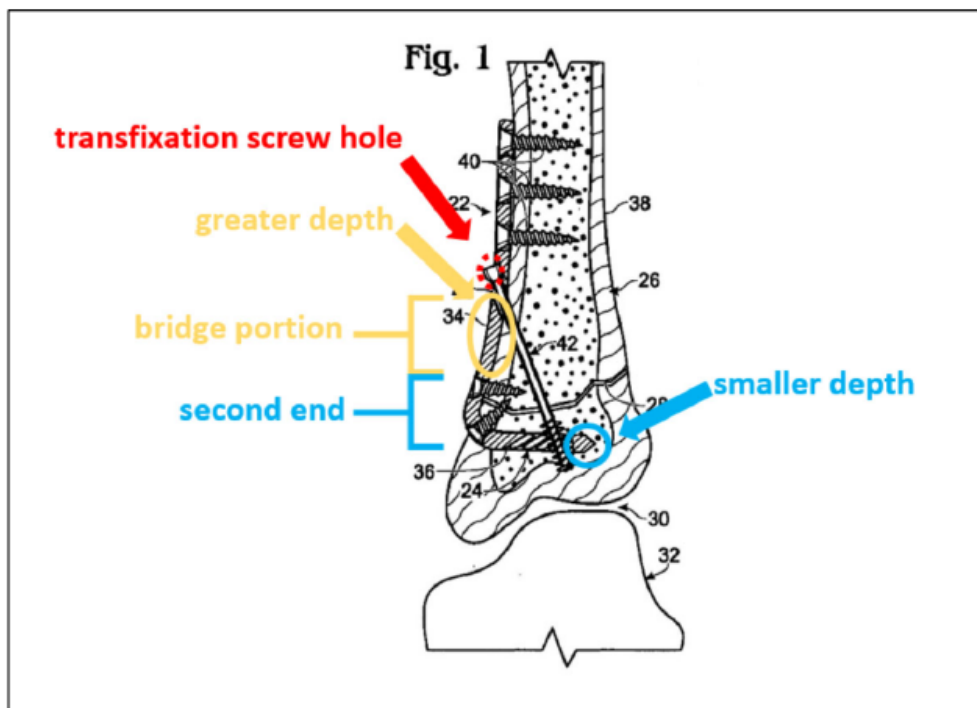
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*Id.* at 38; Ex. 1006, Fig. 1. The version of Figure 1 above is the same cross-sectional view of Falkner's plate attached to the tibia, including Petitioner's blue bracket designating the same alleged "second end," but here Petitioner annotates (with purple arrow, line, and text) an alleged conforming "second inner surface." Pet. 38. Petitioner's position appears to be that this purple portion depicted in Figure 1 would be adapted and thus, configured to conform to the exterior surface of a second bone (the talus) in a scenario where this plate 22 spans, not fracture 28, but joint 30. *Id.* at 37–38.

Turning to claim 10's bridge portion and the requirement that a portion of the bridge and transfixation screw hole have a depth (thickness) greater than a portion of the first or second ends elements 10.3 and 10.5), Petitioner provides another annotation to Falkner's Figure 1. *Id.* at 38–39. This annotated figure is reproduced below.

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*Id.* at 42; Ex. 1006, Fig. 1. This annotated version of Figure 1 of Falkner, above, shows the same plate attached to the tibia. Petitioner designates another segment of Falkner’s exterior plate portion (34) as being a “bridge portion,” which Petitioner marks with a yellow oval, bracketing, and text. Pet. 42. Petitioner also indicates (with yellow arrow and text) that this alleged “bridge portion” has a “greater depth.” *Id.* This alleged bridge portion or section is immediately above the blue-bracketed “second end” as discussed above. Here, however, Petitioner identifies a tip of internal plate portion (36) (i.e., the portion of the plate inserted within the tibia) as having a “smaller depth,” which Petitioner highlights with a blue circle, arrow, and text. *Id.* This annotation also identifies the alleged transfixation screw hole, which Petitioner highlights with red text, arrow, and hashed circle. *Id.*

Petitioner argues that, “[a]s can be seen in Figure 1, at least a portion of the bridge portion and the transfixation screw hole (44) has a depth or thickness greater than at least a portion of said first and second ends.” *Id.* at

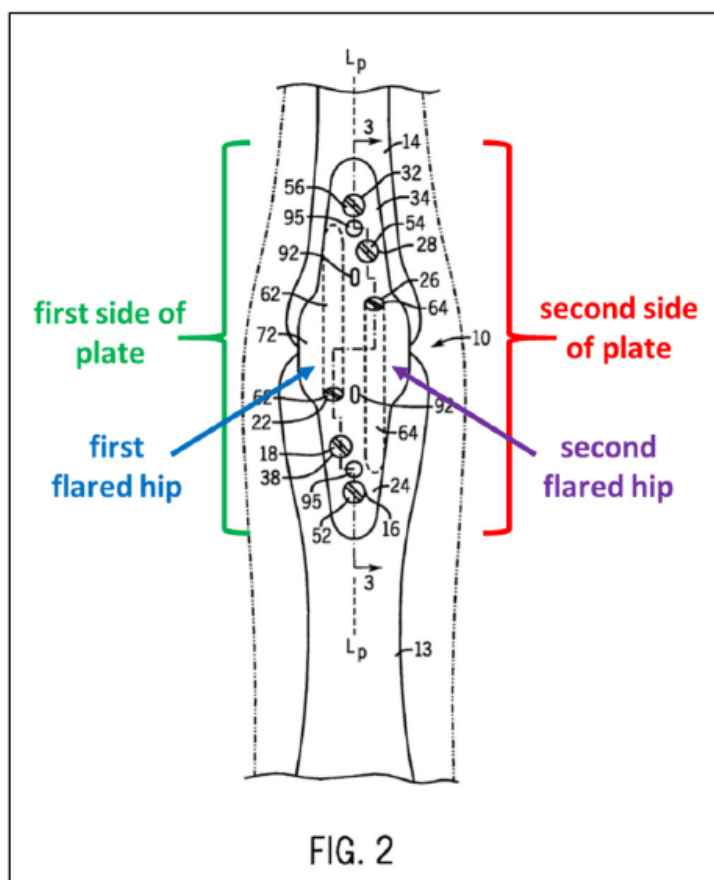
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41–42. According to Petitioner, the alleged “second end” is “thinner at the end” to aid insertion into the bone and becomes thicker toward the bridge to add stability. *Id.* (citing Ex. 1006 ¶ 35).

For element 10.4, the transfixation screw hole and transfixation screw limitations of claim 10, Petitioner identifies Falkner’s Figures 1 and 2. As shown in those figures, cites Falkner’s oblique opening (44) in external plate portion (34), and threaded faster (42) configured for insertion into said opening and fixed engagement with toothed aperture (24) on the plate’s internal plate portion (36). Pet. 39–40. According to Petitioner, Falkner’s oblique opening is a “transfixation screw hole” as claimed, and, in a configuration where Falkner’s plate is designed to attach to a tibia and talus, spanning the joint between those bones, the fastener (i.e., screw) would extend through a portion of tibia (26), through joint (30), and into a second discrete bone (talus, 32). *Id.* at 40. In that configuration, Petitioner contends the talus is loaded relative to the tibia and tensile load is transferred through the screw and into the bridge portion. *Id.* (citing Ex. 1002 ¶ 150). In support, Petitioner cites Falkner’s teaching that “[w]ith the head of the screw engaged with the external plate portion, further rotation of screw 42 and thus further advancement of threaded region 64 into/through the aperture applies a tension to the plate.” *Id.* (quoting Ex. 1006 ¶ 71).

Having cited disclosure in Falkner that allegedly meets all the limitations of claim 10, Petitioner moves to claim 15 and the recited “flared hip[s].” *Id.* at 43–48. Petitioner cites Duncan’s Figure 2, reproduced below with Petitioner’s annotations, as teaching the flared hips comprising generally parabolic wings as recited in claim 15.

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*Id.* at 44 (Ex. 1016, Fig. 2). Duncan's Figure 2, above, depicts a bone plate (10) attached to two bones (13 and 14) of a finger; Petitioner's annotation highlights the alleged first and second sides of the plate with, respectively, green and red brackets. Pet. 44. Petitioner identifies, with blue and purple arrows, the alleged first and second flared hips of the plate on the respective first and second sides of the plate. *Id.* at 44–45 (citing Ex. 1002 ¶¶ 156, 176 (testimony that the hips are symmetrically opposed as parabolic wings)).

Petitioner contends it would have been obvious to modify Falkner's plate to include the symmetrically flared hips of Duncan. *Id.* at 45–47. According to Petitioner, a POSA would understand that bone plates can be strengthened by making certain portions thicker and wider to counteract higher stress that occurs in those portions. *Id.* at 45 (citing Ex. 1002 ¶ 158).

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Petitioner alleges that a POSA would understand that including an angled screw hole, such as Falkner’s oblique opening (44), results in more plate material being hollowed out such that the plate may require additional strength in those areas. *Id.* at 46 (Ex. 1002 ¶ 159). Petitioner argues that, in addition to thickening the area around the angled screw hole, a POSA would understand that widening the plate around the screw hole will provide added support, and that the need for such support would have motivated a POSA to include flared hips on the plate, such as disclosed in Duncan, particularly if Falkner’s plate is designed for use on the medial side of the ankle. *Id.* at 46–47 (citing Ex. 1002 ¶¶ 160–161). Petitioner further contends that a parabolic shape to the hips around the screw hole would help surgeons properly position the plate over the joint. *Id.* at 47 (citing Ex. 1002 ¶ 162). Petitioner argues these changes would have been made with a reasonable expectation of success, predictably adding strength to the plate and adding visual cues to help position the strongest part of the plate over the joint. *Id.*

## 2. *Patent Owner’s Response*

Patent Owner makes various counterarguments with regard to independent claims 10 and 16. PO Resp. 39–47. In addition, Patent Owner asserts that “there is no motivation to include the flared hips Petitioners identify from Duncan on the Falkner plate.” *Id.* at 48 (citing Ex. 2002 ¶¶ 138–142). For purposes of this decision, especially given the parties’ overlapping arguments, we focus on claim 10.

First, Patent Owner argues that Ground 2 is treated as an “anticipation analysis” with respect to the underlying analysis of independent claims 10 and 16 from which challenged claims 15 and 21 depend. *Id.* at 39–40, n. 4.



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But, according to Patent Owner, Falkner “fails to disclose each and every element of [claim 10 of claim 16], arranged as in the claim.” *Id.* at 39.

Second, Patent Owner argues that Falkner fails to disclose a plate for securing two discrete bones together across an intermediate joint. *Id.* at 40–43. Patent Owner contends that Falkner’s plate is not designed to secure the two discrete bones across a joint and further contends that “[t]o make a Falkner-type plate that crosses a joint would require extensive modification.” *Id.* at 41. According to Patent Owner, although “Falkner explains that this type of blade-plate may be configured to cross a joint rather than a bone fracture, Falkner includes ‘a dearth of detail about such a hypothetical plate’s design.’” *Id.* (citing Paper 11, 38; Ex. 2002 ¶ 121). Patent Owner contends that Falkner does not disclose a single embodiment that meets all the limitations of claim 10, so Petitioner and Dr. Gall’s testimony “far exceeds what is described in the ‘four corners of that document [] either expressly or inherently,’” to stretch Falkner’s single-bone embodiment to explain how Falkner’s plate would have been configured in a different context to reach the claimed subject matter. *Id.* at 42.

Lastly, Patent Owner argues that Falkner fails to disclose a “second end” that includes a “fixation point” and an “inner surface configured to substantially conform with a geometry of the second discrete bone” as required by the claims. *Id.* at 43–47. Patent Owner argues that what Petitioner identifies as the “second end” of Falkner’s plate is inside the bone and therefore does not conform to the geometry of the second bone. *Id.* at 45. Patent Owner further contends that,

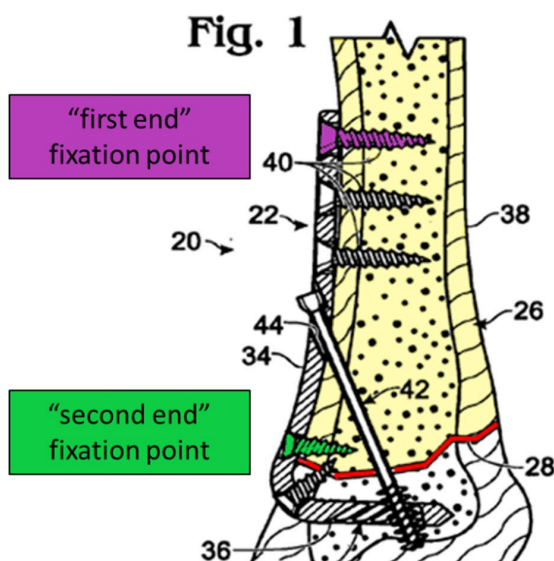
With the interior portion of the Falkner blade-plate unable to conform to the geometry of the second discrete bone, the Petition relies on Dr. Gall, rather than the disclosure of Falkner, to

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conclude that “the plate 22 *would have been* placed across the joint 30 and the second inner surface *would have been* configured to substantially conform with a geometry of the second discrete bone (talus 32).” (Ex. 1002, ¶ 146 (emphasis added)). That something “would have been configured” is the hallmark of obviousness, and perhaps recognizing this after the fact, Dr. Gall at his deposition seemingly changed course and indicated that a Falkner plate spanning a joint would still include the portion that is interior to the bone. (Ex. 2003 86:11–15). Therefore, Falkner fails to disclose a second end configured to “substantially conform with a geometry of the second discrete bone.”

PO Resp. 45–46.

Patent Owner explains that even if the Falkner blade-plate can be moved across the joint, the identified fixation point is not on the second bone (or on the second part of the fractured bone) at all. *Id.* at 46 (citing Ex. 2002 ¶¶ 124–125). To illustrate that point, Patent Owner references Sommers annotated image of Falkner’s figure 1, reproduced below.



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*Id.* at 47 (citing Ex. 1006, Fig. 1; Ex. 2002 ¶ 125). Figure 1 is a sectional view of a bone plate according to Falkner as it would be applied to a bone. Ex. 1001, 3:16–17. According to Patent Owner “Petitioners rely upon a second end fixation point (green) that is on the same side of the bone discontinuity as the first end fixation point (purple).” PO Reply 46 (citing Ex. 2002 ¶ 125). Patent Owner asserts, that if Falkner was “modified to span a joint rather than a fracture, a POSITA would try to position the plate such that the joint would be in the same location as the fracture shown in Figure 1 to preserve the design intent of the Falkner concept.” *Id.* at 47 (citing Ex. 2002 ¶ 126). Thus, according to Patent Owner, Falkner does not expressly or inherently disclose the claimed “second end” under any interpretation of the phrase. *Id.* (citing Ex. 2002 ¶ 134).

### 3. *Petitioner’s Reply*

In its Reply, Petitioner responds that “Falkner unambiguously teaches that ***the same bone plate*** shown in Figure 1 and described in the [S]pecification ‘may be positioned on and/or in any suitable bone(s) to span any natural or artificial discontinuity within a bone or between bones.’” Reply 17 (citing Ex. 1006 ¶¶ 21, 28–29, 33–34, 62). Petitioner cites to a new expert, Dr. Holmes, in support of its position. Ex. 1029. Petitioner argues that extensive modifications to the Falkner plate would not be required and refers to Dr. Holmes’ testimony who believes that “Falkner enables a POSITA to use its plate for joint fusion ***without any design modifications***.” Reply 18 (citing Ex. 1029 ¶¶ 19–20, 25–36). Instead, Petitioner cites to Dr. Holmes who describes a procedure whereby:

surgeons typically shave straight (transversely) across the distal surface of the tibia to create a flat surface to oppose with the flat surface of the dorsal surface of the talus” to help create a

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biomechanically stable joint for fusion. (Ex.1029, ¶¶31–32). The bones are then positioned to create the optimal biomechanical alignment for proper gait following the fusion. (*Id.*, ¶33). The Falkner plate would be positioned to span the joint in the range between the angled screw hole and the internal blade to optimize purchase and efficacy. (*Id.*, ¶35). Depending on patient anatomy, the plate could be contoured with plate benders. (*Id.*, ¶34).

Reply 18. Petitioner contends that Falkner “expressly contemplates and enables a POSITA to use its bone plate for joint fusion, and teaches all of the structural limitations set forth in the challenged claims.” *Id.* at 19.

#### 4. *Patent Owner’s Sur-Reply*

In its Sur-reply, Patent Owner responds that Falkner does not disclose the modifications required to anticipate the challenged claims and instead, the Petitioner relied heavily on Dr. Holmes’ testimony on how the plate could have been modified. Sur-reply 17. Patent Owner also contends that the modifications to Falkner described in Dr. Holmes’ testimony amount to more than slight modifications, and “seemingly admit[s] that Falkner’s passing reference to a two-bone embodiment is insufficient to anticipate Claims 10 and 16,” and insufficient to render obvious these claims. *Id.* Patent Owner then explains the various ways in which the modifications of the Falkner plate by Dr. Holmes fail. *See* Sur-reply 18–21 (“[T]he extensive modifications required for Falkner’s plate to be used across a joint, go beyond what reasonably could be anticipation.”)

#### 5. *Analysis*

Having considered the parties’ positions and evidence of record, summarized above, we determine that Patent Owner has the better position. Petitioner’s position does not prevail for at least the reasons set forth on

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pages 39–48 of the Patent Owner Response and pages 17–21 of the Sur-reply, which we adopt. In particular, we agree with Patent Owner that Falkner’s relied-upon plate shown in Figure 1 is not arranged as claimed. PO Resp. 40–41; Ex. 1006, Fig. 1. It is *not* configured to secure two discrete bones (e.g., the tibia and talus) across an intermediate joint, nor is the plate configured with first and second ends having inner surfaces that substantially conform with a geometry of first and second bones. This is plain from the cross-sectional anatomical views of the tibia, joint, and talus shown in the figure itself. To make the plate so configured as claimed would apparently require at least some level of redesign or modification. Yet, Petitioner cites to its filing in related IPR2021-01452 as allegedly supporting its challenge here. Pet. 33 (“As an initial matter and as shown below, in the accompanying Declaration, and in earlier-filed IPR2021-1452, *Falkner discloses every element of independent Claims 10 and 16 of the 716 patent*”).

Moreover, to the extent Petitioner’s challenge purports to modify Falkner’s single-bone embodiment (e.g., as shown in Figures 1 and 2) by citing various other teachings in Falkner, we see minimal analysis that explains why the POSA would have been motivated to make those modifications with a reasonable expectation of success to arrive at claim 10’s subject matter. Even when only one reference is involved, the mere fact that each claim limitation might be found in such reference’s disclosure does not necessarily prove obviousness without analysis that explains why the skilled artisan would have combined those teachings to arrive at the claimed subject matter. *In re Stepan*, 868 F.3d 1342, 1345–46 n.1 (Fed. Cir. 2017) (“Whether a rejection is based on combining disclosures from

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multiple references, combining multiple embodiments from a single reference, or selecting from large lists of elements in a single reference, *there must be a motivation to make the combination and a reasonable expectation that such a combination would be successful*, otherwise a skilled artisan would not arrive at the claimed combination.”) (emphasis added).

We recognize that Falkner discloses that its plates may be designed to traverse a joint between bones. *See, e.g.*, Ex. 1006 ¶¶ 21, 23, 29. But there is a dearth of detail about such a hypothetical plate’s actual design. On this record, it appears to us that making such a plate or modifying the plate of Figure 1 to render it suitable to, for example, spanning a joint between the tibia and talus, would require the person of ordinary skill in the art to make distinct design choices beyond any embodiment explicitly described in Falkner. Even then, it is not a foregone conclusion that all the claim limitations would be met (e.g., surfaces of the first and second ends that conform to a bone geometry, and a thicker bridge portion relative to the ends). Petitioner provides minimal argument and evidentiary support to explain why all the claimed features would be included. Petitioner argues, for example, that Falkner’s Figure 1 shows a portion of a transfixation screw hole that has a depth greater than a portion of the plate’s first and second ends. Pet. 41–43. What Petitioner identifies, however, is not the screw hole but the head of a screw. *Id.* at 42 (hashed red-circle). Neither the identified bridge portion nor screw hole itself appears to have a depth greater than the plate’s first end—claim 10 recites that the depth be greater than a portion of the *first and second ends*. Petitioner briefly remarks that Falkner “contemplates reducing the [plate] thickness of the bone plate to minimize irritation of soft tissue in regions such as the ‘first end’ of the plate.” *Id.*

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(citing Ex. 1006 ¶¶ 32, 35; Ex. 1002 ¶¶ 151, 174). But, on this record, whether Falkner’s cited disclosures teach or suggest that the plate’s first end, in particular, should be made thinner than the bridge and screw hole portions lacks clarity; and Petitioner does very little to explain why a POSA would have been motivated to decrease the thickness at that specific part of the plate.

Moreover, we note that Petitioner, in one instance and attempting to show satisfaction of one claim limitation, cites a portion of Falkner’s plate that appears to be close to the middle of the plate and characterizes that portion as a “second end.” Pet. 42. Yet, when wanting to show that the second end of the plate is thinner than the bridge, Petitioner points to another portion of the plate—the distal-most tip of the plate, which is actually inserted in the bone itself. *Id.* Petitioner’s position on what constitutes the “second end” of Falkner lacks a degree of clarity and consistency. Petitioner may be cherry-picking certain features of a single-bone embodiment to keep, which features it sees as favorable to its position, while purporting to modify other portions of that embodiment (e.g., contouring the plate to a particular bony geometry) in order to render it suitable for a different attachment across multiple bones.<sup>9</sup> Petitioner’s arguments lack explanation as to why

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<sup>9</sup> As a further example, Petitioner identifies opening (52) in Falkner’s plate in Figure 1 as the alleged fixation point on a second end of the plate as claimed. Pet. 37. But, as described in Falkner, opening (52) and its corresponding bone screw is fixed on the *same side* of the bone discontinuity (fracture) as the plate portion Petitioner identifies as the plate’s first end. Ex. 1006, Fig. 1. Inasmuch as a joint is simply another bone discontinuity in Falkner, Petitioner asserts, with minimal explanation, that a screw would have been placed through opening (52) to secure a second bone (e.g., talus) on the *opposite side* of the joint relative to the plate’s first end when the

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the POSA would have modified the Falkner plate with a reasonable expectation of success.

Petitioner relies on Duncan principally for its teaching related to the “flared hips” feature (elements 15.1/21.1, 15.2/21.2) of the challenged claims. *Id.* at 43–48. Petitioner’s reliance on Duncan and reasoning for adding the flared hips, does not remedy the concerns noted above with Petitioner’s showing on the subject matter recited in claims 10 and 16.

Accordingly, we determine that Petitioner has not demonstrated by a preponderance of evidence that claims 15 and 21 would have been obvious over Falkner and Duncan.

### III. CONCLUSION

In summary:

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/ Basis</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not Shown Unpatentable</b>
15, 21	102	Slater		15, 21
15, 21	103	Falkner, Duncan		15, 21
<b>Overall Outcome</b>				15, 21

### VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 15 and 21 of the ’716 patent are not determined to be unpatentable; and

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plate is modified for use in this different context. *Id.* at 8; Ex. 1002 ¶¶ 145, 168.



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FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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STRYKER CORPORATION and  
WRIGHT MEDICAL TECHNOLOGY, INC.,  
Petitioner,

v.

OSTEOMED LLC,  
Patent Owner.

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Before SHERIDAN K. SNEDDEN, RICHARD H. MARSCHALL, and  
JAMIE T. WISZ, *Administrative Patent Judges*.

SNEDDEN, *Administrative Patent Judge*, concurring.

I concur that Slater does not anticipate claims 15 and 21, and reach that result for the following additional reason.

Independent claims 10 and 16 each recites a “transfixation screw hole *comprising an inner surface configured to direct a transfixation screw* through the transfixation screw hole such that the transfixation screw extends alongside the bridge portion *at a trajectory configured to* pass through a first position on the first bone and a second position on the second bone.” A dispute between the parties is whether the claim recitation for “an

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inner surface configured to direct the transfixation screw . . . at a trajectory” is taught by Slater.

To that point, Petitioner contends that Slater identifies openings 26 and 93 that “each receive a fixation screw that passes through those openings so that the screw is implanted at an angle.” Pet. 27 (citing Ex. 1005, 11:19–21, 13:21–24, Figs. 1, 6, 7). More specifically, Petitioner contends that Slater’s

transfixation screw hole (26 or 93) . . . comprises an inner surface (unnumbered in Slater’s drawings) configured to direct the transfixation screw (25) through the transfixation screw hole such that the transfixation screw extends through the bridge portion (portions of 5 and 20 or portions of 81 and 90) at a trajectory configured to pass through a first position on the first discrete bone (tibia 4), a portion of the joint (2), and a second position on the second discrete bone (talus 3) once the plate (1 or 80) is placed across the joint.

*Id.* at 27–28 (citing Ex. 1002 ¶¶ 116, 134; Ex. 1005, 11:19–25, 13:21–25).

In its Response, Patent Owner directs our attention to Figure 1 of Slater, and contends that this Figure “depicts, in phantom, the use of a screw that passes through the tibia and terminates in the talus.” PO Resp. 10 (citing Ex. 2002 ¶ 55). “The hole that the screw 25 passes through is constructed in a manner that allows the angle of the screw to be modified as the plate is affixed to the ankle joint.” *Id.* (citing Ex. 2002 ¶ 56; Ex. 1005, 11:21–22). “This hole is described as ‘slotted,’ meaning that at least a portion of the hole towards the inner surface of the plate is oblong in one direction in order to allow the screw 25 to pass through at multiple angles.” *Id.* (citing Ex. 2002 ¶ 56; Ex. 1005, 24:4–8); *see also* Ex. 1005, 16:28–30 (“One significant advantage of the plate described is the oblique screw portal

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allowing for various angles and the ability to incorporate more joints into the arthrodesis as required.”), Fig. 1.

Furthermore, Patent Owner notes that Slater “provides no detail regarding the structure of the inner surface of the hole” because a surgeon using Slater’s plate “determines the path in situ with a range of options available.” PO Resp. 33–34 (citing Ex. 1005, Fig. 1; Ex. 2002 ¶ 96). That is, “Slater describes a plate that intentionally allows for varied angles through the same hole.” *Id.* at 34 (citing Ex. 1005, 16:28–30 (“[o]ne significant advantage of the plate described [in Slater] is the oblique screw portal allowing for various angles and the ability to incorporate more joints into the arthrodesis as required”); Ex. 2002 ¶ 102)). Patent Owner contends that, because the hole identified by Petitioner as Slater’s transfixation screw hole allows for varied angles through the same hole, Slater fails to disclose a transfixation screw hole having “an inner surface configured to direct the transfixation screw through the transfixation screw hole . . . at a trajectory,” where “trajectory” is properly interpreted to mean an “allowable fixed angle relative to at least the neutral bending axis of the joint.” PO Resp. 16–19, 35.

In its Reply, Petitioner contends that Patent Owner’s suggestion that trajectory limits the challenged claims to a single, fixed angle is “unsupported by the intrinsic evidence.” Reply 4. Specifically, Petitioner contends that

The claims recite only that the claimed “trajectory” is the transfixation screw trajectory, and that such trajectory is configured to pass through “a first position on the first bone and a second position on the second bone” once the plate is placed across the joint. (EX1001, cls. 10, 16). *There is a wide range of angles at which this can be achieved, not just one fixed angle.* (EX1001, cl. 4; EX1028, ¶11)).

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Reply 2 (emphasis added). Petitioner further contends that “the inner surface of the transfixation screw hole does not, alone, determine the precise angle of the trajectory,” as “the size, shape, and geometry of the screw also determine what angles the trajectory may have.” *Id.* at 3 (citing Ex. 1028 ¶ 12).

Moreover, Petitioner contends that “Patent Owner’s reliance on the ‘neutral bending axis’ as a point of reference for ‘trajectory’ is nonsensical” because “the neutral bending axis of a particular joint may shift depending on the position of the bone plate and the loads exerted on that joint” and, thus, “the ‘trajectory’ cannot be known by analyzing a bone plate or system alone.” *Id.* at 2–3 (citing Ex. 2002 ¶ 39).

I begin this analysis by clarifying that I understand Patent Owner’s position to be that the “inner surface of the transfixation screw hole” is not a hole configured to allow a screw to be inserted into a bone at a plurality of angles, but that the language of the claim requires the configuration of a trajectory at a particular angle where that angle may be configured within a certain range. PO Resp. 18–19 (citing Ex. 2002 ¶ 96; Ex. 1001, 6:48–53). Thus, the dispute between the parties is whether a singular “inner surface of the transfixation screw hole” may be configured to operate so as to accommodate a range of angles, for example, in the same manner that Slater’s oblique screw portal allows for screws to be inserted at varied angles through the same hole. *Id.*; Ex. 1002 ¶ 108 (“One significant advantage of the plate described [in Slater] is the oblique screw portal allowing for various angles and the ability to incorporate more joints into the arthrodesis as required.”) (quoting Ex. 1005, 16:28–30); Ex. 2002 ¶ 101 (“I agree with Dr. Gall that *Slater* teaches a screw hole that allows a screw to be inserted at a wide range of angles”).

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With that important distinction in mind, I consider Patent Owner’s contention that the term “a trajectory” as used in the challenged claims means “a fixed angle relative to the neutral bending axis of the joint.” PO Resp. 16–19, 33–35.

I recognize that the specification makes constant reference to the “neutral bending axis” and its relationship to the trajectory is defined by the disclosed transfixation screw hole. *See, e.g.*, Ex. 1001, 1:62–63 (“the trajectory may be configured to cross a neutral bending axis of the joint once the plate is placed across the joint”); *id.* at 2:59–63 (“the inner surface of the transfixation screw hole in the plate may direct the transfixation screw along a trajectory that crosses a neutral bending axis of the joint”); *id.* at 6:7–11 (“When transfixation screw 150 is screwed into joint 106 along a trajectory that crosses neutral bending axis 118 (as show in FIG. 2), a ‘tension band’ construct is created that puts transfixation screw 150 under tension when joint 106 flexes.”). I also recognize Mr. Sommer’s statements explaining that the axis of a bone plate may generally approximate the direction of the neutral bending axis of the joint. Ex. 2002 ¶ 93. Furthermore, later dependent claims, when accounting for the precise angles recited by those claims, expressly recite angles measured from the neutral bending axis of the joint. *See, e.g.*, Ex. 1001, cl. 13 (“[W]herein the trajectory is configured to pass through the joint at a transfixation angle of about 50 degrees measured from the neutral bending axis.”). Given the guidance set forth in the specification, summarized above, and the apparent agreement between the expert testimony, the trajectory of the recited screw could be measured “relative to both the elongate axis of the plate and the neutral bending axis of the joint.” PO Resp. 17. Nonetheless, I also note that our express determination of whether a trajectory should be measured from an elongate

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axis or neutral bending axis of the joint is unnecessary as such a determination would not affect the outcome of our decision. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

The dispositive question is whether the recited transfixation screw hole is configured to direct the transfixation screw on a trajectory that is a fixed angle or is configured to allow for “adjustable orientation” based on “a predetermined allowable angular range” such as opening 26 of Slater, identified by Petitioner as the transfixation screw hole. Pet. 16; Ex. 1005, 12:23–25, 11:21–22. Here, I first note the specification does not describe a plate having a hole identified as a transfixation screw hole that would accommodate insertion of a screw at a plurality of angles through the same hole. Rather, the specification repeatedly describes the disclosed plate system as having a transfixation screw hole where it is the inner surface of that hole that is configured to direct a screw at a trajectory, which, according to Mr. Sommers, is language a person of ordinary skill in the art would understand to describe a degree of precision around a single fixed angle. Ex. 1001, 1:26–45, 2:8–14, 2:42–46; Ex. 2002 ¶¶ 50, 94, 96; PO Resp. 16–19. For example, the specification describes how “increased plate thickness around transfixation screw hole 102 may also enable transfixation screw hole 102 *to be machined* into bone plate 100 *at an angle* relative to the top surface of bone plate 100.” Ex. 1001, 9:8–12 (emphasis added). In other embodiments, the central axis of the inner surface of the transfixation screw hole defines the trajectory. *Id.* at 1:60–61; 6:41–67. By comparison, other holes in the disclosed plates are not disclosed with the same level of effort

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toward precision when describing the trajectory of a screw. Indeed, the specification even includes a description of an oblong opening such as the one found in Slater, described as compression hole 132 and serves the purpose of tightening bones so as to “to press together at the interface of joint 106.” *Id.* at 9:12–9:46. Taken together, the specification, when read as a whole, describes plates with a transfixation screw hole configured at a single trajectory selected to achieve the functional objectives of the plate, namely, joint fusion, where that single trajectory is preferably between 30 and 70 degrees, and more preferably, 50 degrees. *Id.* at 6:41–55. Petitioner fails to direct us to any example or other disclosure to support its alternative interpretation, namely, a plate configured with a transfixation screw hole 102 configured to permit the placement of a screw at a plurality of trajectories or angles.

Second, other dependent claims support the interpretation of a trajectory configured at a fixed angle. Claims 2 and 11, for example, recites that the “central axis of the inner surface of the transfixation screw hole defines the trajectory,” a distinguishing feature as compared to the device in Slater that I will discuss here by way of comparison. Ex. 1001, 12:66–67. Figure 1 of Slater depicts, in phantom, the use of screw 25 that passes through the tibia and terminates in the talus. PO Resp. 10 (citing Ex. 2002 ¶ 55). The hole that screw 25 passes through is oblique<sup>10</sup> and allows the

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<sup>10</sup> It is undisputed that the hole identified by Petitioner as the transfixation screw hole is oblong. As noted by Patent Owner, this hole is described as “slotted,” which means “that at least a portion of the hole towards the inner surface of the plate is oblong in one direction in order to allow the screw 25 to pass through at multiple angles.” PO Resp. 10 (citing Ex. 2002 ¶ 56; Ex. 1005, 24:4–8). Likewise, Dr. Gall recognizes the same hole as the transfixation screw hole of Slater and describes it as an “oblique screw



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angle of the screw to be modified as the plate is affixed to the ankle joint. *Id.* (citing Ex. 2002 ¶ 56; Ex. 1005, 11:21–22). In other words, the oblong hole of Slater is specifically designed to not have a central axis that defines the screw trajectory. Ex. 2002 ¶ 56 (“[A]t least a portion of the hole towards the inner surface of the plate is oblong in one direction in order to allow the screw 25 to pass through at multiple angles”); *see also* Ex. 2002 ¶ 97 (Figure 1 of Slater “does not detail anything at all regarding the structure of [the ‘inner surface’ of the transfixation screw hole], much less demonstrate the hole has an ‘inner surface configured to direct the transfixation screw . . . at a trajectory.’”)

Claim 4 includes an allowable range between 30 and 70 degrees for the trajectory. Claim 4, however, depends from claim 2, and therefore requires the central axis of the screw hole to define the trajectory of the screw between 30 and 70 degrees. Upon review of this claim structure for the ’716 patent, I agree with Patent Owner that a person of ordinary skill in the art would understand that, in the context of the intrinsic record, this means that any given plate is configured at a single trajectory or single fixed angle, and that different plates could have a different fixed angle, with plates having single fixed angles in the range between 30 and 70 degrees. PO Resp. 18–19 (Ex. 2002 ¶ 95; *see also* Ex. 1001, 6:41–55). Here, I also credit Mr. Sommer’s explanation that a person of ordinary skill in the art would understand that to mean that a surgeon would be provided with a kit that includes multiple plates, each one with a single fixed angle of, for example, 50, 55, 60, 65 and 70 degrees. Ex. 2002 ¶ 95; Sur-Reply, 4.

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portal allowing for various angles and the ability to incorporate more joints into the arthrodesis as required.” Ex. 1002 ¶ 108; Ex. 1005, 16:28–30.

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Moreover, claim 5 further limits the trajectory of claim 2 to “a transfixation angle of about 50 degrees measured from the neutral bending axis.” Ex. 1001, cl. 5; *see also id.* at cl.13. Claim 6 further limits claim 1 and requires that “the inner surface of the transfixation screw hole is configured to lockably engage the head of the transfixation screw,” and that engagement of the screw head and screw hole would inherently constrain the configuration of the screw hole to a particular angle. Thus, each of dependent claims 2–6, 11, and 13 further limit claims 1 and 10 along the lines of a single “trajectory” and are more specifically directed to plates configured with a screw hole that defines a single trajectory.

Finally, while the term “trajectory” used in isolation may not necessarily connote a fixed angle, the assessment here is whether the recitation of an inner surface of a screw configured to direct a screw *at a trajectory* is describing a fixed angle, and more specifically, describing a screw hole configured to direct a screw at a single trajectory. In view of the claim structure of independent claims 10, and 16, the content of the specification, and testimony of Mr. Sommer’s, summarized above, I determine it does. The claims expressly require a transfixation screw hole that itself is “configured to direct the transfixation screw through [a] transfixation screw hole . . . *at a trajectory*,” which in context indicates that a screw hole directs the trajectory of the screw, even if other factors may also influence the trajectory. *Cf.* Reply 3–4. In other words, we agree with Patent Owner that “a POSITA reading [claim 10] in light of the intrinsic record would understand that [the claim language describing the recited screw hole] means that the shape of the inner surface of the transfixation screw hole is such that it guides the screw at a fixed angle relative to both

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the elongate axis of the plate and the neutral bending axis of the joint.” PO Resp. 17; Ex. 2002 ¶ 94.

I recognize Petitioner’s argument that “[w]hile Slater’s transfixation screw hole allows the transfixation screw to be positioned within a predetermined range, once the screw is threaded into the bone, the screw trajectory, and thus the angle, is fixed,” however, I am not persuaded. Reply 12. Petitioner insufficiently explains how the fixation of the angle of the screw trajectory by virtue of being inserted into a bone equates to the claim requirement that the inner surface of the transfixation screw hole directs the screw at a trajectory.

Petitioner’s challenge to dependent claims 15 and 21 as anticipated by Slater is substantially similar to its analysis of independent claims 10 and 16, which relies on Petitioner’s predicate analysis on the independent claims. Pet. 31–33. That analysis suffers from at least the same shortcomings discussed here for independent claims 10 and 16 [and claim 1].

In view of the above, I determine that Slater does not disclose “the transfixation screw hole comprising an inner surface configured to direct [a] transfixation screw . . . at a trajectory” as required by the claims. Slater’s opening 26 is meant to be a variable angle hole and not an opening configured to direct a screw at a particular angle or trajectory. *See* Ex. 1005, 11:19–22 (“an angle within a predetermined allowable angular range”); *see also* Ex. 2003, 65:1–4 (Dr. Gall agreeing that each of the angles depicted by phantom screws shown in Figure 1 of Slater are achieved through the same screw hole 26). Accordingly, for this additional reason, I determine that Petitioner has not demonstrated by a preponderance of evidence that claims 15 and 21 are anticipated by Slater.

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**United States Court of Appeals for the Federal Circuit**

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**Case Name:** Stryker Corporation v. OsteoMed LLC

**Case Number:** [23-1925](#)

**Docket Text:**

Note to File: The following cases are consolidated: 23-1925 Lead with 23-1926, 23-1928, 23-1929, 23-2010, 23-2011, 23-2012 Consolidated Member Cases. The parties must file all documents in the lead appeal only. [945353] [23-1925, 23-2010] [KMH]

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**United States Court of Appeals for the Federal Circuit**

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**Case Name:** Stryker Corporation v. OsteoMed LLC

**Case Number:** [23-1925](#)

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Note to File: The following cases shall be considered companion cases and assigned to the same merits panel: 23-1925 and 23-2397. [952173] [23-1925, 23-2397] [GWK]

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(54) **BONE PLATE WITH TOOTHED APERTURE**

**Related U.S. Application Data**

(75) Inventor: **James G. Falkner JR.**, Hillsboro, OR (US)

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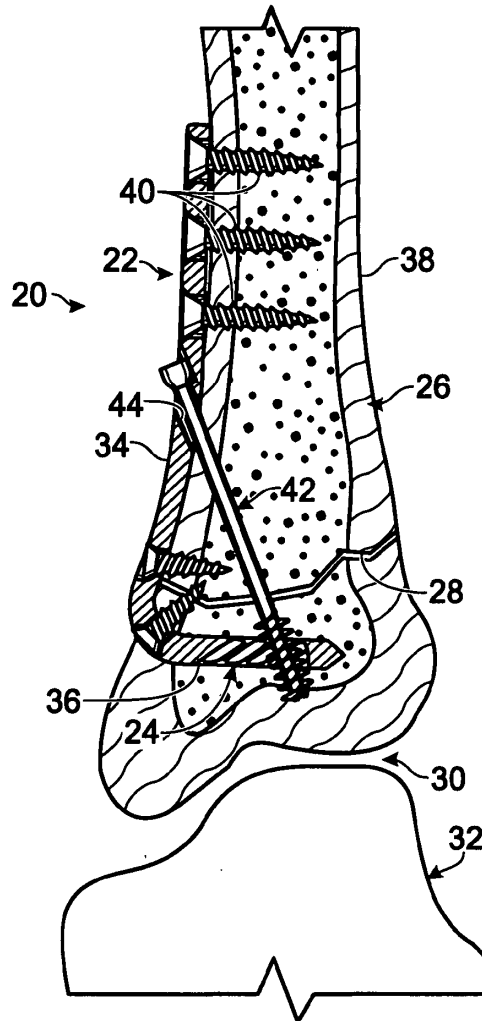
(73) Assignee: **Acumed LLC**

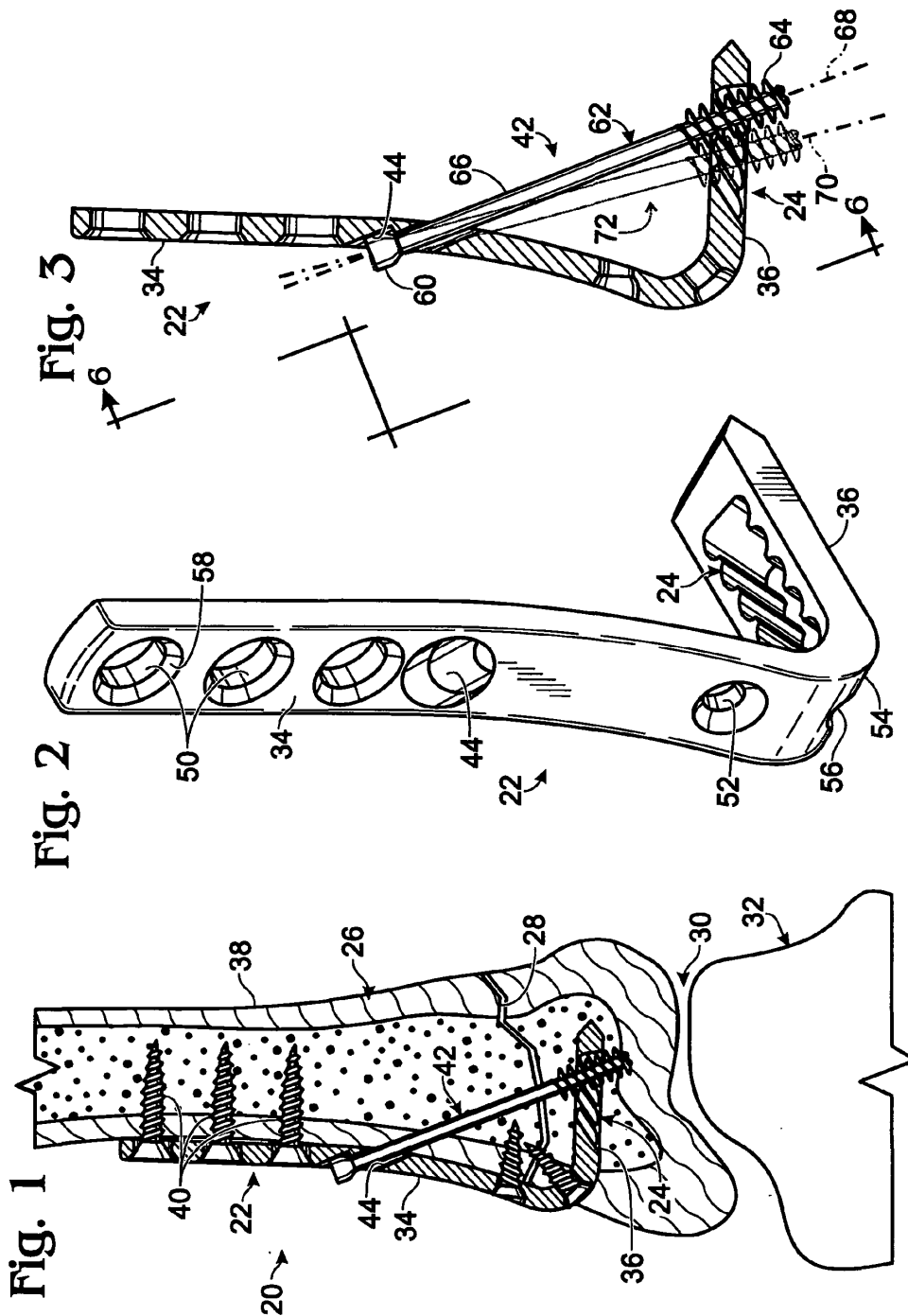
(57) **ABSTRACT**

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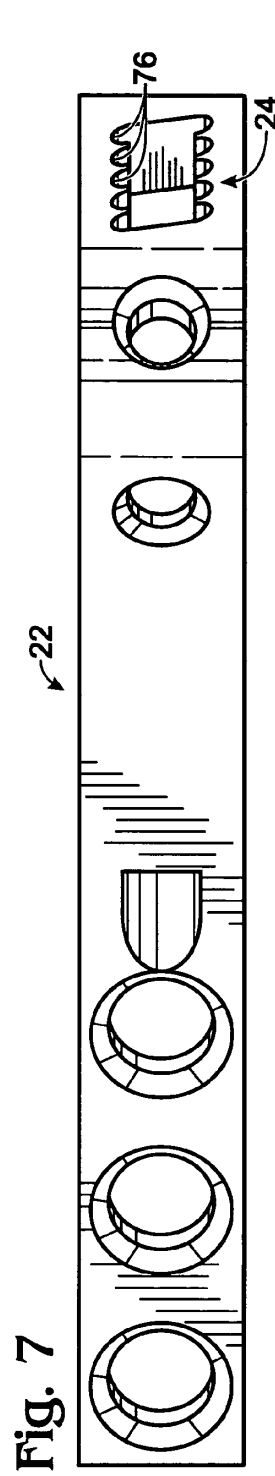
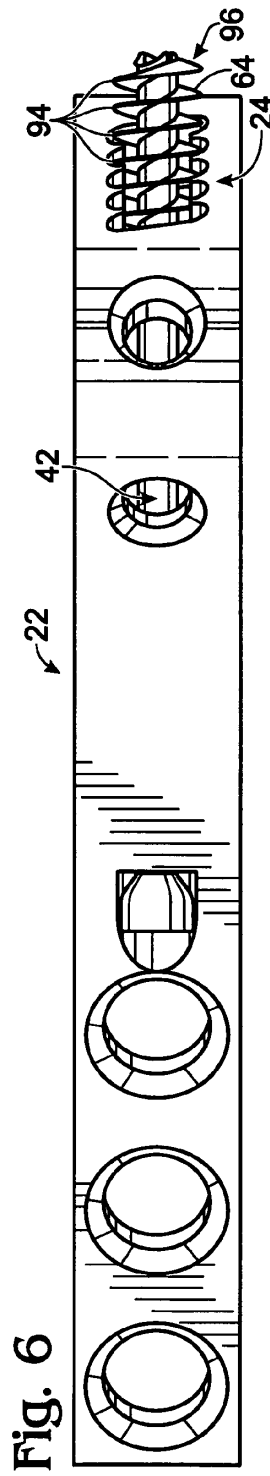
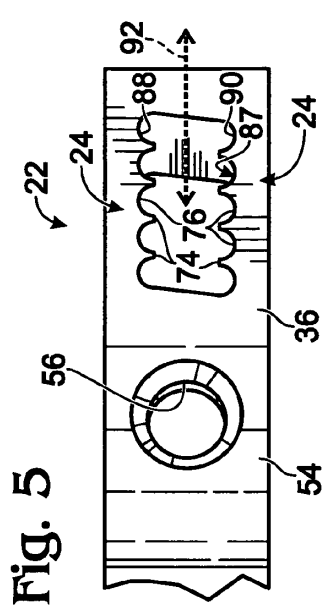
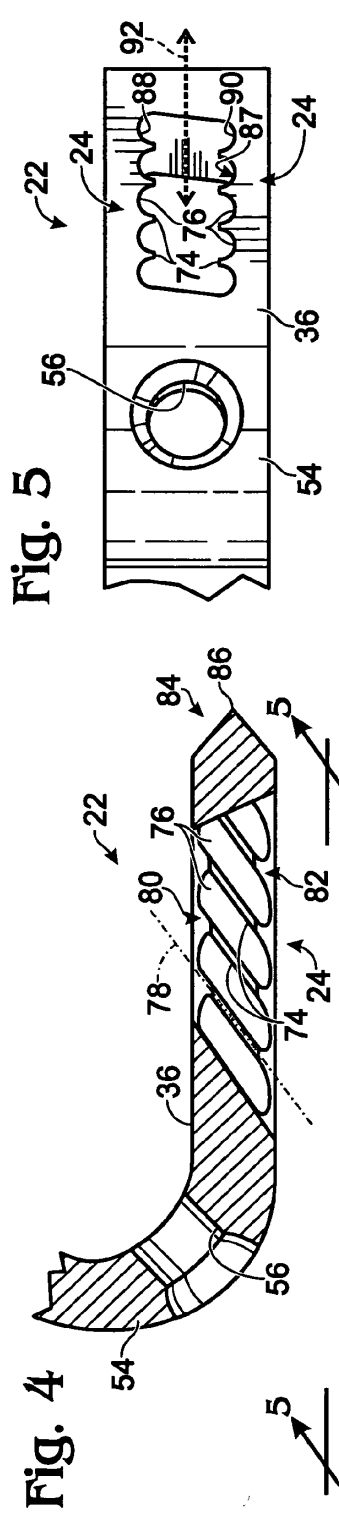
Systems, including methods and apparatus, and kits, for fixing bones using bone plates having toothed apertures for retaining fasteners.

(22) Filed: **Feb. 2, 2005**

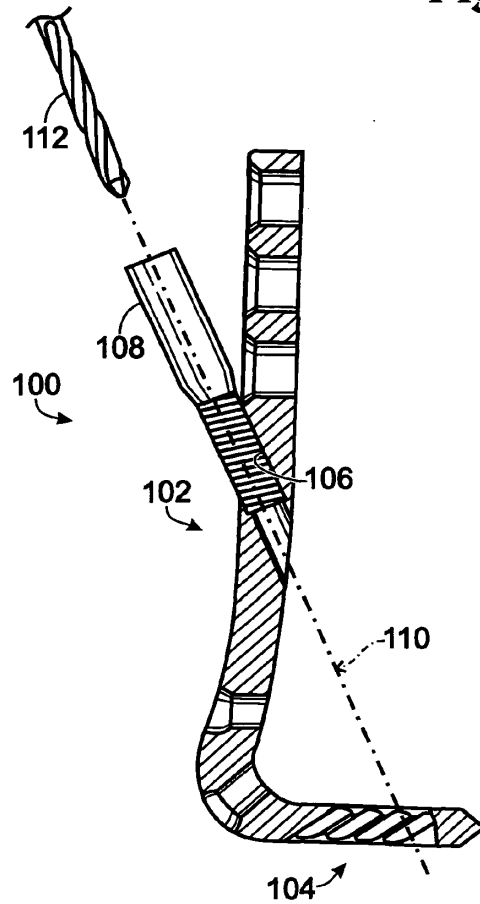




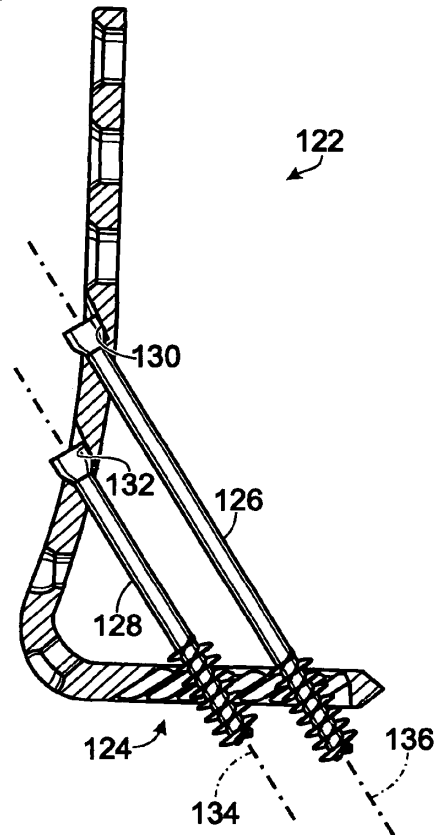




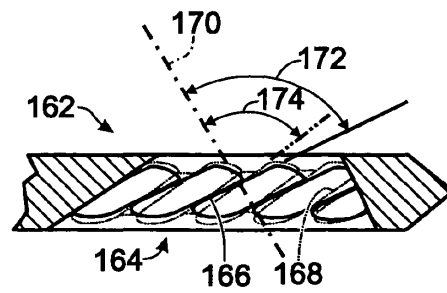
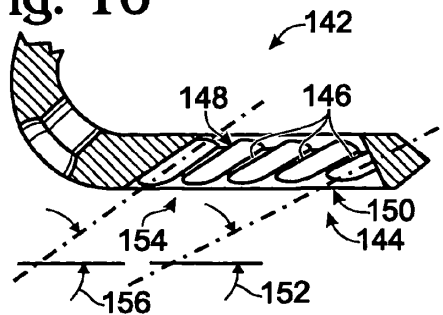
**Fig. 8**



**Fig. 9**



**Fig. 10**



**Fig. 11**

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**BONE PLATE WITH TOOTHED APERTURE****CROSS-REFERENCE TO PRIORITY APPLICATION**

[0001] This application is based upon and claims the benefit under 35 U.S.C. § 119(e) of U.S. Provisional Patent Application Ser. No. 60/541,414, filed Feb. 2, 2004, which is incorporated herein by reference in its entirety for all purposes.

**INTRODUCTION**

[0002] The human skeleton is composed of 206 individual bones that perform a variety of important functions, including support, movement, protection, storage of minerals, and formation of blood cells. To ensure that the skeleton retains its ability to perform these functions, and to reduce pain and disfigurement, bones that become damaged should be repaired promptly and properly. Typically, a fractured or cut bone is treated using a fixation device, which reinforces the bone and keeps it aligned during healing. Fixation devices may include external fixation devices (such as casts and fixators) and/or internal fixation devices (such as bone plates, nails, and/or bone screws), among others.

[0003] Bone plates are sturdy internal devices, usually made of metal, that mount directly to the bone adjacent a fracture (or other bone discontinuity). To use a bone plate to repair a discontinuity of a bone, a surgeon typically (1) selects an appropriate plate, (2) reduces the discontinuity (e.g., sets the fracture), and (3) fastens the plate to bone fragments disposed on opposite sides of the discontinuity using suitable fasteners, such as screws and/or wires, so that the bone plate spans the discontinuity and the bone fragments are fixed in position.

[0004] Fixation of bone fractures (or other discontinuities) can be problematic when these fractures are disposed near the ends of bones ("metaphyseal fractures"). Standard bone plates secured only to the exterior surface of the fractured bones may not be sufficient to immobilize metaphyseal fragments. In particular, these fragments may have lower bone density and/or quality so that bone screws cannot achieve sufficient purchase in bone. Accordingly, metaphyseal fractures may not heal properly during fixation, resulting in malunion or persistent nonunion at the fracture sites. Problems with metaphyseal fractures that do not heal properly can be particularly prevalent in larger bones that support greater loads, such as the humerus, the tibia, and the femur, among others.

[0005] Blade plates may provide a suitable alternative to standard bone plates for fixation of metaphyseal fractures. Blade plates may be shaped to define two adjacent plate portions: an anchor portion, and a blade portion extending transverse to the anchor portion. The anchor portion may be configured, as in a standard plate, to be secured to an exterior surface of a fractured bone, generally extending to a more central (diaphyseal) region of the bone. In contrast, the blade portion may be placed in the interior of the bone, generally in the end (metaphyseal) region of the bone, so that the anchor and blade portions are disposed on opposite sides of the fracture. The blade portion, when properly secured to an end region, thus may stabilize the end region against movement relative to the central region of the bone, to promote healing of the fracture.

[0006] An "interlocking" bone screw has been used to secure the blade portion, when inside bone, to an end region of a fractured bone. The interlocking screw may span the anchor and blade portions (and the fracture) to "interlock" and tension these portions. For example, the interlocking screw may be placed first through an opening of the anchor portion, next through bone and across the fracture, and then through an opening in the blade portion. The interlocking screw may be oversized, to engage the blade portion in an interference fit at the opening of the blade portion and to limit movement of the blade portion relative to the interlocking screw. However, the interference fit may be difficult to achieve reproducibly and may not be tight enough to prevent slippage of the blade portion relative to the interlocking screw.

**SUMMARY**

[0007] The present teachings provide systems, including methods, apparatus, and kits, for fixing bones using bone plates having toothed apertures for retaining fasteners.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0008] FIG. 1 is a sectional view of an exemplary system for fixing bones using a bone plate with a toothed aperture, with the bone plate secured to a fractured bone, in accordance with aspects of the present teachings.

[0009] FIG. 2 is a perspective view of the bone plate of FIG. 1, in accordance with aspects of the present teachings.

[0010] FIG. 3 is a sectional view of the bone plate of FIG. 1 illustrating exemplary alternative axes along which a bone screw may be directed into threaded engagement with the toothed aperture, in accordance with aspects of the present teachings.

[0011] FIG. 4 is a fragmentary sectional view of selected portions of the bone plate of FIG. 1, particularly a bridge portion and an internal portion of the bone plate including the toothed aperture, in accordance with aspects of the present teachings.

[0012] FIG. 5 is a view of the bone plate of FIG. 4, taken generally along line 5-5 of FIG. 4.

[0013] FIG. 6 is a view of the bone plate and bone screw of FIG. 3, taken generally along line 6-6 of FIG. 3.

[0014] FIG. 7 is view of the bone plate of FIG. 6, taken as in FIG. 6 but with the bone screw removed.

[0015] FIG. 8 is a sectional view of another exemplary bone plate with a toothed aperture, showing a drill guide in threaded engagement with an opening of the bone plate and defining a guide axis that extends through the toothed aperture, in accordance with aspects of the present teachings.

[0016] FIG. 9 is a sectional view of yet another exemplary bone plate with a toothed aperture, with a plurality of threaded fasteners extending from plate openings into threaded engagement with the toothed aperture, in accordance with aspects of the present teachings.

[0017] FIG. 10 is a fragmentary sectional view of selected portions of an exemplary bone plate having a toothed aperture with nonparallel ridges, in accordance with aspects of the present teachings.

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[0018] FIG. 11 is a fragmentary sectional view of selected portions of another exemplary bone plate having a toothed aperture with nonparallel ridges, in accordance with aspects of the present teachings.

#### DETAILED DESCRIPTION

[0019] The present teachings provide systems, including methods, apparatus, and kits, for fixing bones using bone plates having toothed apertures for retaining fasteners. The bone plates may include first and second plate portions disposed adjacent one another. Each plate portion may be an exterior portion configured to be apposed and secured to an exterior surface of bone. Alternatively, one or more of the plate portions may be an interior portion configured to be disposed interior to bone, as in a blade plate. Each bone plate portion may define one or more openings for receiving fasteners, such as bone screws, that secure the plate portions to bone.

[0020] At least one of the openings may be a toothed aperture, that is, an opening having one or more projections or "teeth" at its perimeter. The toothed aperture may be configured to receive a threaded shank of a bone fastener and retain the threaded shank by rotational coupling with one or more teeth of the aperture, to achieve threaded engagement between the threaded shank and the teeth. Accordingly, the toothed aperture may include teeth configured as relatively short thread-like segments, possibly but not necessarily helical in structure. In some examples, the toothed aperture may be configured to receive and retain one or more bone fasteners that extend from one or more openings of the plate, for intra-plate placement of bone fasteners. Bone plates having toothed apertures may provide, among others, (1) more options for placement of bone screws (more screws per aperture and/or a greater range of permissible screw angles, (2) increased tolerance for misguided screws, (3) improved retention of bone screws, (4) a greater range of permissible angles to which the plate can be bent, and/or (5) intra-plate tensioning, for example, to compress bone.

[0021] FIG. 1 shows an exemplary system 20 for fixing bones using a bone plate 22 with a toothed aperture 24. The bone plate may be positioned on and/or in any suitable bone(s) to span any natural or artificial discontinuity within a bone or between bones. In the present illustration, plate 22 is secured to a distal end (metaphyseal) region of a tibia bone 26 and spans fracture 28. In other examples, plate 22 may span a joint, such as joint 30 between tibia 26 and talus 32, among others.

[0022] Bone plate 22 may have first and second plate portions 34, 36 configured to be disposed in any suitable positions relative to the bone. In the present illustration, the first and second plate portions 34, 36 are disposed so that they are, respectively, external to (on) and internal to (in) tibia 26.

[0023] First (external) plate portion 34 may be secured to tibia 26 adjacent diaphyseal region 38 of the bone using any suitable bone fasteners, such as bone screws 40 in the present illustration. The bone screws may be placed into bone from any suitable number of openings of the bone plate. The external plate portion may be contoured to follow an exterior surface of the bone.

[0024] Second (internal) plate portion 36 may be disposed substantially interior to tibia 26 (or in a bone adjacent to the

tibia) and/or may be apposed to surfaces of the bone that normally lie within the bone. The internal plate portion may define toothed aperture 24, which is configured to receive and retain a threaded fastener 42. The threaded fastener may extend into and/or through only one opening (a toothed aperture) or at least two openings of the bone plate, such as an opening 44 in the external plate portion. Alternatively, or in addition, the threaded fastener may extend between two or more distinct plates.

[0025] Further aspects of the present teachings are described in the following sections, including (I) overview of bone plates, (II) plate portions, (III) toothed apertures, (IV) methods of using bone plates with toothed apertures, and (V) examples.

#### [0026] I. Overview of Bone Plates

[0027] Bone plates as described herein generally comprise any relatively low-profile (or plate-like) fixation device configured to stabilize at least one bone by attachment to the bone. The fixation device may be configured to span any suitable bone discontinuity so that the fixation device fixes the relative positions of bone fragments (and/or bones) disposed on opposing sides of the bone discontinuity.

[0028] Suitable discontinuities may occur naturally and/or may result from injury, disease, and/or surgical intervention, among others. Accordingly, exemplary discontinuities for use with the bone plates described herein may include joints, fractures (breaks in bones), osteotomies (cuts in bones), and/or nonunions (for example, produced by injury, disease, or a birth defect), among others.

[0029] The bone plates described herein may be configured for use on any suitable bone of the human skeleton and/or of another vertebrate species. Exemplary bones may include bones of the arms (radius, ulna, humerus), legs (femur, tibia, fibula, patella), hands/wrists, feet, vertebrae, scapulas, pelvic bones, cranial bones, ribs, and and/or clavicles, among others. Particular examples where bone plates having toothed apertures may be suitable include, but are not limited to, discontinuities in or adjacent metaphyseal regions of long bones, such as proximal or distal regions of the humerus, the tibia, and/or the femur. Alternatively, or in addition, these bone plates may be used to fuse joints, such as fusion of the tibiototalcalcaneal (ankle) joint, among others.

[0030] Each bone plate may be configured to be disposed in any suitable position relative to its target bone. The bone plate (or a plate portion, see Section II) may be configured to be disposed in contact with an exterior surface of the bone and thus may be positioned at least substantially (or completely) exterior to the bone. Alternatively, the bone plate may be configured to be disposed at least partially interior to a bone, that is, apposed to (normally) interior bone surfaces (i.e., subchondral bone) when secured to the bone. The interior bone surfaces may be created during installation of the bone plate (such as by punching the bone plate through the exterior bone surface) and/or may be accessible due to a break, a cut, and/or the like.

[0031] The bone plates may be formed of any suitable materials. The bone plates may be of a sturdy yet malleable construction. Generally, the bone plates should be stiffer and stronger than the section of bone spanned by the plates, yet flexible (e.g., springy) enough not to strain the bone signifi-

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cantly. Suitable materials for forming the bone plates may be biocompatible materials (such as titanium or titanium alloys, cobalt chromium, stainless steel, plastic, ceramic, etc.) and/or bioabsorbable materials (such as polygalactic acid (PGA), polylactic acid (PLA), copolymers thereof, etc.), among others.

[0032] The bone plates may be configured to reduce irritation to the bone and surrounding tissue. For example, the bone plates may be formed of a biocompatible material, as described above. In addition, the bone plates may have a low and/or feathered profile to reduce their protrusion into adjacent tissue and rounded, burr-free surfaces/edges to reduce the effects of such protrusion.

[0033] The bone plates described herein may be sized and shaped to conform to particular portions of a bone (or bones). The plates may be generally elongate, with a length  $L$ , a width  $W$ , and a thickness  $T$ . Here, length  $L \geq \text{width } W \geq \text{thickness } T$ . In use, the long axis of the bone plates (or of a plate portion) may be aligned with the long axis of the corresponding bone or may extend obliquely or even transversely relative to the bone's long axis. The length and/or width of the bone plates may be varied according to the intended use, for example, to match the plates with a preselected region of bone(s) and/or a particular injury to the bone. For example, the plates may be generally linear for use on the shaft of a long bone and/or may have a nonlinear shape, such as for use near an end of a bone. In some embodiments, the bone plates may be configured for use on both sides of the body, such as when the bone plates are bilaterally symmetrical. In some embodiments, the bone plates may be asymmetrical and configured for use on either the left or the right side of the body.

[0034] The bone plates (or exterior plate portions, see Section II) may include inner (bone-facing) and outer (bone-opposing) surfaces. One or both of these surfaces may be contoured generally to follow an exterior surface of a target bone (or bones) for which a bone plate is intended, so that the bone plate maintains a low profile and fits onto the bone(s). For example, the inner surface of a plate (or of an exterior plate portion) may be generally complementary in contour to the bone surface. The outer surface of the plate (or of an exterior plate portion) also may correspond in contour to the bone surface and may be generally complementary to the inner surface of the plate. The bone plates may be partially and/or completely precontoured, at the time of manufacture, allowing physicians to apply them to bone(s) with little or no additional bending at the time of application.

[0035] The thickness of the bone plates may be defined by the distance between the inner and outer surfaces of the plates. The thickness of the plates may vary between plates and/or within the plates, according to the intended use. For example, thinner plates may be configured for use on a smaller bone and/or on a bone or bone region where soft tissue irritation is a greater concern. Thickness may be varied within the plates. For example, the plates may become thinner as they extend over protrusions (such as processes, condyles, tuberosities, and/or the like), reducing their profile and/or rigidity, among others. Alternatively, or in addition, the thickness may vary as an internal portion of the bone plate extends into bone, for example, becoming thinner to facilitate insertion of this internal portion or thicker to increase structural stability. The thickness of the

plates also may be varied to facilitate use, for example, to make the plates thinner where they typically need to be deformed by bending and/or twisting the plates, such as at the junction (or bridge region) between plate portions (see Section II). In this way, the plates may be thicker and thus stronger in regions where they may not need to be contoured, such as along the shaft of the bone.

[0036] The bone plates generally include a plurality of openings, also termed apertures. The openings may be adapted to receive fasteners for securing the plates to bone. Alternatively, or in addition, the openings may be adapted (1) to alter the local rigidity of the plates, (2) to permit the plates to be manipulated with a tool (such as an attachable handle), (3) to facilitate attachment of a guide for drilling and/fastener placement, and/or (4) to facilitate blood flow to bone regions where the bone plates are installed, to promote healing, among others.

[0037] The openings may have any suitable positions, sizes, and/or densities within each portion of a bone plate. The openings may be arrayed generally in a line along a portion of the plate, for example, centered across the width of the plate. Alternatively, the openings may be arranged nonlinearly, for example, disposed in a staggered arrangement. In some embodiments, the openings may be configured so that a set of bone screws can be directed along nonparallel paths, for example, to increase the purchase of the set of bone screws on bone. Further aspects of openings configured to direct bone screws, particularly unicortical bone screws, along nonparallel paths are included in the following patent application, which is incorporated herein by reference: U.S. patent application Ser. No. 10/968,850, filed Oct. 18, 2004.

[0038] The openings may have any suitable shape and structure. Exemplary shapes may include circular, elliptical, rectangular, elongate, etc. The openings may include counterbores configured, for example, to receive a head of a bone screw. The openings may be threaded or nonthreaded, and each bone plate may include one or more threaded and/or nonthreaded openings. In some embodiments, the plates may include one or a plurality of elongate openings (slots) extending axially, obliquely, and/or transversely along each bone plate. The elongate openings may be compression slots that include counterbores to provide compression when heads of bone screws are advanced against the counterbores. Alternatively, or in addition, the elongate openings may be used to adjust the position of bone plates and/or plate portions relative to bone before the plates are fully secured to the bone. One or more of the elongate openings of each bone plate may be a toothed aperture (see Sections III and V).

[0039] The fasteners generally comprise any mechanism for affixing a bone plate to a bone, including screws, pins, and/or wires, among others. A preferred fastener is a bone screw, including unicortical, bicortical, and/or cancellous bone screws. Unicortical and bicortical bone screws typically have relatively small threads for use in hard bone, such as typically found in the shaft portion of a bone, whereas cancellous bone screws typically have relatively larger threads for use in soft bone, such as typically found near the ends (metaphyseal regions) of a long bone. Unicortical bone screws penetrate the bone cortex once, adjacent the bone plate. Bicortical bone screws penetrate the bone cortex

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twice, adjacent the bone plate and opposite the bone plate. Generally, unicortical screws provide less support than bicortical screws, because they penetrate less cortex. The size and shape of the fasteners may be selected based on the size, shape, and disposition of the openings, or vice versa. For example, unicortical bone screws may be suitable with particular arrangements of openings, as described above. In some examples, the bone screws may include a shaft that includes a distal threaded region and a proximal nonthreaded region. This arrangement of threaded and nonthreaded regions may permit the screw to function as a compression screw that spans plate portions and applies an adjustable tension between the plate portions.

[0040] In some examples, the bone plates may include projections, such as prongs, configured to be received in bone to restrict movement of the bone plates. The projections may be sharp or blunt according to their intended use. Prongs may be used in place of, or in addition to, bone fasteners, for one or more portions of each bone plate.

#### [0041] II. Plate Portions

[0042] The bone plates may have at least one, and generally two or more, plate portions (or anchor portions) configured to be secured to different regions of a bone (or bones). Each plate portion may be structured for a specific region of a bone. For example, the bone plates may include a proximal plate portion for attachment to a more proximal region of a bone, and a distal plate portion for attachment to a more distal region of the same bone. The bone plates may include an external plate portion configured to fit against an exterior surface region of bone adjacent a bone discontinuity. Alternatively, or in addition, the bone plates may include an internal plate portion configured to be received in an interior region of bone (generally, subchondral bone) adjacent the bone discontinuity.

[0043] The plate portions of a bone plate may have any suitable connection. In some examples, two or more of the plate portions (or the entire bone plate) may be formed integrally, so that a unitary bone plate includes the plate portions. Alternatively, plate portions may be formed as separate pieces. The separate pieces may be connected by any suitable connection and/or joint, including a fastener(s), welding, a hinge joint, a ball in socket, and/or the like. Further aspects of bone plates having adjustable joints are described in the following patent application, which is incorporated herein by reference: U.S. patent application Ser. No. 10/716,719, filed Nov. 19, 2003. In some examples, the bone plate may be two separate bone plate components configured to be connected by one or more fasteners, such as fasteners that extend from one of the plate components, through bone, and into engagement with another of the plate components.

[0044] The plate portions of a bone plate may have any suitable relative disposition. The plate portions may be disposed substantially collinear and/or parallel, oblique, or substantially transverse to one another. In some examples, the plate portions may define planes that are disposed oblique or substantially transverse to each other. For example, the bone plate may have an exterior plate portion that fits against the exterior surface of a bone and an interior plate portion that extends at least substantially transverse to the exterior surface to be received in the interior of the bone. Accordingly, in some examples, the bone plate may be generally L-shaped, such as when viewed in profile.

[0045] The relative disposition of plate portions may be fixed and/or adjustable. In some examples, the plate portions may be connected integrally by a deformable bridge region, so that the bone plate can be bent pre- or peri-operatively to adjust the relative disposition of the plate portions. Alternatively, the plate portions may be distinct pieces connected, for example, through an adjustable joint, as described above.

[0046] Each plate portion may have one or more openings. Each opening may be configured to receive a bone fastener for placement of the bone fastener into bone. Alternatively, or in addition, the opening may be configured to enable the fastener to span plate portions by extending between an opening in each of two or more plate portions, such as a first opening in a first plate portion and a toothed aperture in a second plate portion.

[0047] The first opening may have any suitable configuration. For example, the first opening may be configured to receive a head of the fastener and the toothed aperture may be configured to receive a shank of the fastener, or vice versa. The first opening may be threaded or nonthreaded, and may be circular or elongate. Accordingly, the first opening may restrict a fastener of a suitable diameter to substantially one direction of approach (such as with a circular first opening and a close-fitting fastener), or the first opening may be an elongate opening (or, for example, a circular opening large enough to provide a loose fit with the fastener) that permits this fastener be placed at a disposition selected from a range of angular dispositions. In any case, the first opening may define an axis that intersects the toothed aperture suitable for threaded engagement of a fastener. In some examples, the first plate portion may include two or more first openings that permit two or more fasteners to be disposed, alternately and/or concurrently, in threaded engagement with the toothed aperture.

[0048] An internal plate portion may be configured for installation into bone. Accordingly, the internal plate portion may be thinner than the external plate portion. Alternatively, or in addition, the internal plate portion may taper toward an end of the plate, to provide a leading edge that enters bone first, so that the leading edge can penetrate bone more easily.

[0049] The internal plate portion may have fewer openings than the external plate portion. In some embodiments, the internal plate portion may have one or more toothed apertures and no additional openings. Alternatively, the internal plate portion may have one or more additional (toothed or nontoothed) openings.

#### [0050] III. Toothed Apertures

[0051] Each bone plate may include one or more toothed apertures. A toothed aperture, as used herein, is any opening (aperture) having one or more projections (teeth) that adjoin the opening. The projections may be formed by any suitable portion of the bone plate, and generally by a wall that defines at least a portion of the perimeter of the aperture. The projections may be configured so that the toothed aperture can receive and axially retain a shank (and/or other feature), particularly a threaded shank, of a fastener.

[0052] The toothed aperture may have any suitable shape and position in the bone plate. In some examples, the toothed aperture may be elongate, such as generally oval or rectangular, among others. The toothed aperture may extend generally parallel, oblique, or transverse to the long axis of

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the bone plate (or of the plate portion that defines this aperture). The toothed aperture may be disposed in only one plate portion, such as in an external or internal plate portion, or may extend to be included in two or more plate portions, for example, by extending across a bridge portion of the bone plate. In some examples, each of two or more plate portions of the bone plate may include a distinct toothed aperture. In some examples, one plate portion may have two or more toothed apertures. The toothed aperture may be configured to receive and axially retain one fastener or two or more fasteners.

**[0053]** The toothed aperture may have any suitable number and arrangement of projections. The toothed aperture may have a single projection or may have a set of two or more projections. At least a subset of the projections may be arrayed along the perimeter of the aperture to form an array of projections or teeth. The term “along,” as used herein relative to an aperture, means arranged generally parallel to the long axis of the aperture. The array of projections may be a substantially linear array, generally with adjacent pairs of projections of the array separated by a depression (such as a groove). The linear array may be described as an array of thread-like segments, although each segment may be nonhelical and/or defined by a generally noncylindrical surface (in contrast to a standard thread or thread segment). The toothed aperture may have all of its projections disposed on the same side of the aperture or may have a subset of one or more projections disposed on each side of a pair of opposing sides (wall portions) of the aperture. In some examples, the toothed aperture may have opposing subsets of projections disposed on opposing sides of the aperture. The opposing subsets may have the same (or a different) spacing of projections. Corresponding, opposing projections of the opposing subsets may be aligned transversely or may be offset, for example, offset along the aperture by about one-half or one-fourth the spacing, among others, between adjacent pairs of projections.

**[0054]** Adjacent projections may have any suitable spacing. For example, the projections may be spaced corresponding to the pitch of the thread(s) of a threaded fastener (or an integral multiple of the pitch). (In some examples, the pitch may correspond to an integral multiple of the spacing of the projections.) A spacing corresponding to the pitch may restrict the angular disposition (or range of angular dispositions) at which the fastener can be engaged with the toothed aperture. In some examples, the spacing may be adjusted to allow a different angle of approach of the fastener (such as from different openings) and/or to permit a fastener to engage the projections from a set of two or more angular dispositions (such as different orientations of the fastener from the same opening). The spacing between the projections may be the same along the aperture. Alternatively, the spacing may change along the aperture so that, for example, threaded shanks, with threads of different pitch, may be received at different positions along the toothed aperture.

**[0055]** The projections may have any suitable structure. The projections may be configured, for example, as ridges, knobs, or prongs, among others. The ridges may have crests that are blunt or sharp. The ridges may have flanking sides defined by flat, convex, or concave surfaces, among others.

**[0056]** The ridges, and particularly their crests, may extend at any suitable orientation (and thus angle) relative to

the long axis of the aperture and/or relative to a length-by-width plane defined by the plate portion in which the ridges are disposed. For example, the ridges may be oblique ridges that extend obliquely to this plane. The orientation of the ridges may determine, at least partially, the orientation and/or range of angles at which a fastener can be received by the toothed aperture. For example, ridges oriented more nearly orthogonal to the plane of the toothed aperture (or plate portion), that is, oriented at a larger angle relative to this plane, may receive and retain a fastener approaching from a smaller angle to the toothed aperture, that is, shallower or more nearly tangential to the aperture (for example, from an opening disposed closer to the toothed aperture). Similarly, ridges oriented more nearly parallel to the plane of the toothed aperture (or plate portion), that is, oriented at a smaller angle relative to this plane, may receive and retain a fastener approaching from a larger angle to the toothed aperture, that is steeper or more nearly orthogonal to the aperture (for example, from an opening disposed farther from the toothed aperture). Accordingly, the orientations/angles of the ridges may vary along the length of the aperture to accommodate the approach of a fastener from different orientations and/or different openings (see Example 4 below). A fastener disposed through a given opening in a first portion of a plate commonly would approach farther (more distal) regions of a toothed aperture in a second portion of the plate at a shallower or more nearly tangential angle than it would approach nearer regions of the toothed aperture. Therefore, ridges in farther regions of a toothed aperture may be oriented at larger angles relative to the plane of the toothed aperture, ridges in nearer regions of the toothed aperture may be oriented at smaller angles relative to the plane of the toothed aperture, and ridges in intermediate portions of the tooth aperture may be oriented at angles that vary continuously and/or discontinuously between these two extremes. Consequently, the average ridge-to-ridge spacing (or the number of ridges per unit length) may be smaller toward the proximal end of the toothed aperture (relatively closer to the bridge portion of the plate) and larger toward the distal end of the toothed aperture (relatively farther from the bridge portion). Similarly, the length of these ridges may be relatively smaller toward the proximal end of a toothed aperture, and relatively larger toward the distal end of the toothed aperture.

**[0057]** The orientations/angles of the ridges may be the same or different on opposing sides of the aperture. In some examples, the orientation of the ridges may be approximately orthogonal to an axis defined by an opening that directs a fastener along the axis to the toothed aperture. In some examples, different orientations of the ridges on opposing sides of the aperture may, for example, be suitable to more accurately match a thread of a fastener, locally on opposing sides of the fastener's shank. For example, the ridges on one side of the aperture may define an obtuse angle with the axis and ridges on the other side of the aperture may define an acute angle with the axis, in correspondence with opposing sides of a fastener's helical thread (see Example 4 below).

**[0058]** The projections may have any suitable length and height. For example, the projections may be formed as longer ridges (measured along their crests) to decrease the permitted range of angular approach of a fastener to the aperture or as shorter ridges to increase this permitted range. The length of the ridges may be defined at least substantially

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by the local thickness of the plate and the orientation of the ridges (for ridges that extend between opposing surfaces of the plate) and/or may be shorter (or longer) than this local thickness. The height of projections (measured as the distance from the crest to the base of a projection) may correspond at least substantially to the height of a thread on a fastener (measured from the crest to the root of the thread). Alternatively, the height of projections may be less or more than the height of the thread on the fastener.

[0059] Depressions disposed between the projections may have any suitable structure, generally as defined by the structure of flanking projections. For example, narrower projections having concave sides may define wider depressions, and wider projections having convex sides may define narrower depressions, everything else being equal. Accordingly, the shape of the projections and depressions may determine, at least partially, the range of angles at which a fastener can be engaged with the toothed aperture and/or how tightly the fastener fits into the toothed aperture. In some examples, the toothed aperture may be configured so that a received fastener is tightly engaged. Alternatively, the toothed aperture may be configured so that a received fastener can be jiggled axially (in the absence of bone).

[0060] The toothed aperture may have any suitable width. The ridges may have a constant width or, for example, may taper toward one or both opposing ends. Accordingly, portions of the toothed aperture may flare toward a fastener-entry side of the toothed aperture, to facilitate guiding a fastener into the aperture.

#### [0061] IV. Methods of Using Bone Plates with Toothed Apertures

[0062] Bone plates having toothed apertures, as described herein, may be attached to or otherwise associated with bone using any suitable method. In an exemplary method, a practitioner may perform any suitable combination of the following steps in any suitable order: (1) select a target bone(s) having a discontinuity; (2) select a suitable bone plate having a toothed aperture; (3) select one or more suitable fasteners for use with the bone plate and the target bone, including a threaded fastener configured to be received in the toothed aperture; (4) prepare the target bone(s) for installation of the bone plate (for example, position bone fragments (such as to reduce a fracture) and/or remove cartilage (such as for bone fusion at a joint)); (5) adjust the shape of the plate, if desired, to adjust the fit of the bone plate in relation to the target bone(s); (6) place a first (internal) portion of the bone plate in the target bone (such as by insertion into a preformed hole in the bone and/or by forcing the internal portion into the bone); (7) secure a second (external) portion of the bone plate to a surface of the target bone using one or more of the fasteners selected; and (8) place one or more fasteners through one or more openings of the external portion of the plate, through an adjacent bone fragment and across the discontinuity into a spaced bone fragment, and into threaded engagement with the toothed aperture of the internal portion. Step (8) may be facilitated, for example, by using an imaging apparatus (such as a fluoroscope) and/or an external guide device to guide placement of the fastener. Exemplary external guide devices are described in the following patent application, which is incorporated herein by reference: U.S. patent application Ser. No. 10/717,401, filed Nov. 19, 2003.

[0063] The bone plates described herein may be fabricated by any suitable methods. The bone plates or features thereof may be cast, machined, drilled, stamped, formed, and/or bent, among others.

[0064] The bone plates described herein may be provided as kits. The kits may include one or more bone plates having a toothed aperture. One or more fasteners configured to be received in the toothed aperture, particularly from an opening in another portion of the plate.

#### V. EXAMPLES

[0065] The following examples describe selected aspects and embodiments of the present teachings, including exemplary bone plates with toothed apertures and methods of using these exemplary bone plates to fix bones. These examples and the various features and aspects thereof are included for illustration and are not intended to define or limit the entire scope of the present teachings.

##### Example 1

##### Exemplary Bone Plate with a Toothed Aperture

[0066] This example describes an exemplary bone plate including a toothed aperture, in accordance with aspects of the present teachings; see **FIGS. 2-7**.

[0067] **FIG. 2** shows bone plate **22** in the absence of fasteners and bone; bone plate **22** may be used as a blade plate. Various features of this bone plate, such as toothed aperture **24**, external portion **34**, internal portion **36**, and opening **44** were introduced above in relation to **FIG. 1**.

[0068] External and internal portions **34**, **36** may include a plurality of openings. For example, the external portion may include a first set of one or more openings **50**, a second set of one or more openings **52**, and an oblique opening **44** disposed between the first and second sets. The internal portion **36** may include toothed aperture **24** and one or more additional openings. A bridge portion **54** may include one or more bridge openings **56** disposed generally at the junction between the external and internal plate portions. Each opening may be threaded or nonthreaded and may include (or lack) a counterbore **58** configured, for example, to reduce protrusion of a fastener's head above the outer surface of the plate.

[0069] Bridge portion **54** may connect the exterior and interior portions of bone plate **22**. The bridge portion may be configured to span a bone discontinuity. Alternatively, or in addition, the bridge portion may define, at least partially, the angular disposition of the external and internal portions of the bone plate. For example, here, the bridge portion includes an approximate right-angle bend so that the plate portions extend transverse to one another. However, the bridge portion may define any suitable angle and may be configured to permit pre- and/or peri-operative adjustment of the shape of the plate. The bridge portion thus may be narrowed, thinned, annealed, and/or otherwise configured and/or treated to facilitate bending at this portion. Bridge openings (such as opening **56**) may permit bending and/or may be suitable to direct fasteners at oblique angles relative to one or more of the plate portions, among others.

[0070] **FIG. 3** shows bone plate **22** holding a bone screw **42** in threaded engagement with toothed aperture **24**. The



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bone screw may include a head **60** and a shank **62**. Head **60** may be nonthreaded (as shown here) or may include a thread configured to lock the head to the plate. The shank may be a threaded shank that includes a distal threaded region **64** and a proximal nonthreaded region **66**. Alternatively, the bone screw may include a thread(s) that extends substantially or completely along the shank. The thread may be a relatively deep thread, such as the thread found in cancellous bone screws, or may be a relatively shallow thread, such as the thread found in cortical bone screws.

[0071] Screw **42** may span external and internal plate portion **34**, **36** and lock to toothed aperture **24**, to provide intra-plate tension between the plate portions. For example, the screw may be received first in oblique opening **44** and then thread into toothed aperture by turning the bone screw so that threaded region **64** advances into and engages the projections of toothed aperture **24**. With the head of the screw engaged with the external plate portion, further rotation of screw **42** and thus further advancement of threaded region **64** into/through the aperture applies a tension to the plate.

[0072] The toothed aperture, bone screw, and oblique opening may be configured to permit the bone screw to thread into the toothed aperture along two or more distinct axes. In the present illustration, bone screw **42** may threadably engage the toothed aperture along axis **68**. Alternatively, bone screw **42** may threadably engage the toothed aperture along alternative axis **70**, as illustrated with the bone screw shown at **72** in phantom outline. Accordingly, a surgeon has greater flexibility in selecting a path for intra-plate placement of the bone screw.

[0073] FIG. 4 shows selected portions of bone plate **22**, particularly bridge portion **54** and internal portion **36**. Locking aperture **24** may include a plurality of projections (ridges **74**) and depressions (grooves **76**). The ridges and grooves may extend obliquely, shown at **78**, relative to the aperture. Ridges are considered as "oblique ridges" when they extend obliquely to the long axis of the toothed aperture. Furthermore, the toothed aperture may widen or flare toward the external plate portion, shown at **80**, and/or opposing the external plate portion, shown at **82**.

[0074] Internal portion **36** may be configured to be placed into bone. Accordingly, the interior portion may include a leading end region **84** that is beveled or tapered, to facilitate introducing the interior portion into the bone. In some examples, the leading end region may include a relatively sharp leading edge **86**.

[0075] FIG. 5 shows a view of toothed aperture **24** taken generally parallel to the orientation of ridges **74** and grooves **76**. The ridges may have concave sides and a blunt crest. The grooves may be cylindrical, that is, corresponding to a portion of a cylinder (such as a half-cylinder).

[0076] The toothed aperture may be defined by a wall **87** of the internal plate portion. The wall may be distinct from inner and outer surfaces of the bone plate and/or may be included in one or both of these surfaces. The wall may include opposing wall portions **88**, **90**, which may extend along the perimeter of the aperture in a generally parallel relationship, as shown here. The ridges and/or grooves thus may be disposed along each wall portion, that is, arrayed generally parallel to the long axis **92** of the toothed aperture.

In some examples, the ridges/grooves (and/or projections/depressions) may be disposed in a linear array along each wall portion. Each ridge and groove (and/or projection and depression) may be defined by, and thus restricted to, only one of the opposing wall portions. One or more (or all) projections of one opposing wall portion may be offset along the long axis of the aperture relative to one or more (or all) projections of the other opposing wall portion. The offset may be a fraction of the spacing between adjacent projections, such as about one-half or about one-fourth of this spacing.

[0077] FIGS. 6 and 7 show bone plate **22** viewed generally along line 6-6 of FIG. 3, in the presence and absence, respectively, of bone screw **42**. When disposed in threaded engagement with toothed aperture **24**, individual thread segments **94** of the bone screw (FIG. 6) may be received in individual grooves **76** of the toothed aperture (see FIGS. 6 and 7). In some examples, the bone screw may be advanced until a distal section of threaded portion **64** has traveled through the toothed aperture, to be disposed distally thereof, shown at **96**.

[0078] In an exemplary embodiment, intended only for illustration, bone plate **22** may have the following dimensions: overall unbent length—4.667 inches; bent length—3.542 inches; length from bridge portion opening to end of external portion—3.407 inches; length from bridge portion opening to end of internal portion—1.260 inches; width of plate 0.433 inches; thickness of plate 0.189 inches; angle of axis defined by the oblique opening in relation to the long axis of the internal portion—66 degrees; and spacing between ridges of the toothed aperture (measured parallel to the long axis of the internal portion)—0.146 inches.

#### Example 2

##### Exemplary System for Guiding a Fastener to a Toothed Aperture

[0079] This example describes an exemplary system for defining a guide axis that extends through a toothed aperture; see FIG. 8.

[0080] FIG. 8 shows a system **100** for drilling and fastener placement. The system includes another exemplary bone plate **102** with a toothed aperture **104**. The bone plate include a threaded opening **106** configured to threadably receive a cannulated drill guide **108**. The drill guide, when engaged with the bone plate in threaded opening **106**, may define an axis **110** along which a fastener may threadably engage the toothed aperture. Accordingly, a drill **112** may be guided along the drill guide to form a hole centered about guide axis **110**. After hole formation in bone, a bone screw or other suitable fastener then may be placed into the threaded aperture and rotatably engaged with toothed aperture **104**. The bone screw may be guided to the toothed aperture while the drill guide is still engaged with the plate and/or after the drill guide is removed. The bone screw thus may have a threaded or nonthreaded head for locking or nonlocking engagement, respectively, threaded opening **106**.

[0081] In other embodiments, a drill guide may be employed that does not threadably engage the bone plate. In these embodiments, the axis defined by the drill guide may be adjustably selected by a surgeon, to permit greater

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flexibility in selection of an axis along which a threaded fastener engages the toothed aperture.

#### Example 3

##### Exemplary Bone Plate with Increased Intra-Plate Coupling

[0082] This example describes an exemplary bone plate with a locking aperture targeted by a plurality of plate openings; see **FIG. 9**.

[0083] **FIG. 9** shows another exemplary bone plate **122** with a toothed aperture **124**. Bone plate **122** is configured so that a plurality of threaded fasteners **126**, **128** may be received in a plurality of oblique openings **130**, **132** and extend to toothed aperture **124** for threaded engagement therein. The fasteners may extend to the toothed aperture along parallel (or nonparallel) axes **134**, **136**.

#### Example 4

##### Exemplary Bone Plates with Nonparallel Ridges

[0084] This example describes exemplary bone plates having toothed apertures with nonparallel ridges; see **FIGS. 10 and 11**.

[0085] **FIG. 10** shows the internal and bridge portions of an exemplary bone plate **142** having a toothed aperture **144** with nonparallel ridges **146**. The nonparallel ridges are defined by one of the opposing wall portions **148** of the plate. (In other words, these ridges are on the same side of the toothed aperture.) Ridges closer to the leading end of the internal portion, shown at **150**, may extend at a smaller angle(s) (such as angle **152**) relative to the long axis of the internal portion (more nearly parallel to this long axis). Ridges closer to the trailing end of the internal portion, shown at **154**, may extend at a larger oblique angle(s) (such as angle **156**) relative to the long axis of the toothed aperture (more nearly perpendicular to this long axis).

[0086] **FIG. 11** shows the internal portion of an exemplary bone plate **162** having a toothed aperture **164** with nonparallel ridges **166**, **168**. Ridges **166** disposed on the far side of the aperture are drawn in solid lines, as in a standard sectional view. (The "far side" corresponds to the wall portion on the left side of the toothed aperture when viewed from the external portion of the plate along fastener placement axis **170**.) Ridges **168** disposed on the opposing, near side (wall portion on the right side) of the aperture are drawn in phantom outline because they normally would not be visible in this sectional view. Here, ridges **166** of the left-sided wall portion define an obtuse angle **172** with axis **170**, and ridges **168** of the right-sided wall portion define an acute angle **174** with axis **170**. These obtuse and acute angles may be selected so that the ridges on the opposing sides of the toothed aperture more closely correspond to the local thread angle on opposing sides of the fastener's threaded shank.

#### Example 5

##### Selected Embodiments

[0087] This example describes selected embodiments of the invention, presented as a series of indexed paragraphs.

[0088] 1. A bone plate, comprising: (A) a first portion defining an opening; and (B) a second portion connected to the first portion and having a wall defining an aperture, the wall including at least one projection configured to retain a fastener placed through the opening and advanced rotationally into the aperture.

[0089] 2. The bone plate of paragraph 1, wherein the opening is elongate.

[0090] 3. The bone plate of paragraph 1, wherein the opening is circular and defines an axis extending obliquely to the long axis of the first portion.

[0091] 4. The bone plate of paragraph 1, wherein the first portion includes a bone-facing surface that is substantially convex along a path extending generally parallel to the long axis of the first portion.

[0092] 5. The bone plate of paragraph 1, wherein the first portion defines a plurality of elongate openings.

[0093] 6. The bone plate of paragraph 1, wherein the first portion defines a plurality of openings, and wherein the at least one projection is configured to retain, concurrently, at least two fasteners placed through at least two of the plurality of openings and advanced rotationally into the aperture.

[0094] 7. The bone plate of paragraph 1, wherein the at least one projection is a set of projections.

[0095] 8. The bone plate of paragraph 7, wherein the set of projections includes a linear array three or more projections.

[0096] 9. The bone plate of paragraph 8, wherein the spacing between each adjacent pair of projections of the linear array is at least substantially the same.

[0097] 10. The bone plate of paragraph 7, wherein the wall includes a pair of opposing walls, and wherein the set of projections includes one or more projections included in each of the opposing walls.

[0098] 11. The bone plate of paragraph 10, wherein each of the opposing walls includes three or more projections.

[0099] 12. The bone plate of paragraph 11, wherein the three or more projections of each opposing wall are disposed in a linear array.

[0100] 13. The bone plate of paragraph 10, wherein each of the opposing walls includes at least two projections having a spacing between the at least two projections, and wherein the spacing of the at least two projections is at least substantially the same for each of the opposing walls.

[0101] 14. The bone plate of paragraph 10, wherein one or more projections of one of the opposing walls is offset from the at least one projection of the other opposing side.

[0102] 15. The bone plate of paragraph 14, wherein one of the opposing walls includes two or more projections having a spacing, the at least one projection of the other opposing wall being offset by one-half the spacing in relation to a transverse axis defined by the toothed aperture.

[0103] 16. The bone plate of paragraph 1, wherein the at least one projection is a plurality of projections and the openings are a plurality of openings, and wherein the toothed aperture is configured to retain at least two fasteners

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placed through at least two of the plurality of openings and advanced rotationally into the aperture.

[0104] 17. The bone plate of paragraph 1, wherein the aperture defines a plane, and the at least one projection has a crest that extends obliquely to the plane.

[0105] 18. The bone plate of paragraph 17, wherein the at least one projection includes a plurality of projections disposed in a linear array, and wherein the crests of the plurality of projections are at least substantially parallel.

[0106] 19. The bone plate of paragraph 1, wherein the at least one projection includes a set of projections separated by depressions, and wherein the projections have sharp crests and wherein the depressions have rounded bottoms.

[0107] 20. The bone plate of paragraph 1, wherein the first portion is configured to appose an exterior surface of the bone, and wherein the second portion is configured to be placed in the bone.

[0108] 21. A bone plate comprising a wall defining an elongate aperture and including opposing projections configured to retain a fastener advanced rotationally into the aperture.

[0109] 22. The bone plate of claim 21, wherein the opposing projections including opposing arrays of projections.

[0110] 23. The bone plate of claim 22, wherein each opposing array of projections includes a set of ridges.

[0111] 24. The bone plate of claim 23, wherein the ridges of the set extend at least substantially parallel to one another.

[0112] 25. The bone plate of claim 23, wherein the elongate aperture defines a plane, and wherein the ridges extend obliquely to the plane.

[0113] 26. A method of securing the bone plate of any of the preceding numbered paragraphs to a bone, comprising: (A) selecting the bone plate of any one of paragraphs 1-25; and (B) advancing a fastener rotationally into the elongate aperture so that the at least one projection retains the fastener in the elongate aperture.

[0114] 27. A system or kit for repairing bones, comprising (A) a bone plate having a wall defining an aperture, the wall including at least one projection; and (B) a bone fastener configured to be placed into the aperture and retained therein by the at least one projection.

[0115] 28. The system or kit of paragraph 27, wherein the at least one projection includes a pair of opposing linear arrays, each opposing linear array including two or more projections.

[0116] 29. The system or kit of paragraph 28, wherein the two or more projections are configured as ridges having an orientation, and wherein the orientation defines a permissible range of angles from which the bone fastener can be placed into the aperture.

[0117] The disclosure set forth above may encompass multiple distinct inventions with independent utility. Although each of these inventions has been disclosed in its preferred form(s), the specific embodiments thereof as disclosed and illustrated herein are not to be considered in a limiting sense, because numerous variations are possible. The subject matter of the inventions includes all novel and

nonobvious combinations and subcombinations of the various elements, features, functions, and/or properties disclosed herein. The following claims particularly point out certain combinations and subcombinations regarded as novel and nonobvious. Inventions embodied in other combinations and subcombinations of features, functions, elements, and/or properties may be claimed in applications claiming priority from this or a related application. Such claims, whether directed to a different invention or to the same invention, and whether broader, narrower, equal, or different in scope to the original claims, also are regarded as included within the subject matter of the inventions of the present disclosure.

I claim:

1. A bone plate for bone fixation, comprising:

a plate member configured to engage and support a bone and including a wall defining an aperture, the wall including a plurality of teeth disposed along the aperture.

2. The bone plate of claim 1, wherein the wall includes a pair of opposing wall portions disposed in a generally parallel relationship, and wherein each of the plurality of teeth is restricted to one of the wall portions.

3. The bone plate of claim 2, wherein one or more teeth of one opposing wall portion are offset along the aperture from one or more teeth of the other opposing wall portion.

4. The bone plate of claim 1, wherein the plurality of teeth includes a plurality of oblique ridges.

5. The bone plate of claim 1, wherein the plurality of teeth includes a substantially linear array of at least three projections disposed along the aperture.

6. The bone plate of claim 1, wherein the aperture includes opposing ends, and wherein the plurality of teeth is spaced from the opposing ends.

7. The bone plate of claim 1, wherein the plate member includes a first plate portion defining an opening and a second plate portion defining the aperture, and wherein the opening is disposed so that a threaded fastener can be received in at least the opening and advanced rotationally into threaded engagement with one or more of the plurality of teeth, thereby spanning the first and second plate portions with the threaded fastener.

8. The bone plate of claim 7, wherein the first plate portion is configured to be placed on bone, and wherein the second plate portion is configured to extend into bone.

9. The bone plate of claim 8, wherein the second plate portion includes a leading end region, and wherein the leading end region is tapered.

10. A system for bone fixation, comprising:

a fastener; and

a bone plate including a first plate portion defining an opening and a second plate portion including a wall defining an aperture, the wall including a plurality of projections configured to retain the fastener extending along either of at least two axes from the opening.

11. The system of claim 10, wherein the fastener includes a head and a shank, and wherein the shank includes a nonthreaded region adjacent the head and a threaded region spaced from the head.

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12. The system of claim 10, wherein the at least two axes are nonparallel.

13. The system of claim 10, wherein the second plate portion defines a long axis, and wherein the plurality of projections includes oblique ridges extending at one or more oblique angles relative to the second plate portion.

14. The system of claim 10, wherein the bone plate is generally L-shaped.

15. The system of claim 10, wherein the first plate portion is configured to be disposed on bone, and wherein the second plate portion is configured to be disposed in bone.

16. A method of fixing bone, comprising:

selecting a bone plate including a first plate portion defining an opening and a second plate portion including a wall, the wall defining an aperture and including a plurality of projections disposed along the aperture;

disposing the first plate portion on bone and the second plate portion in bone;

placing a fastener through the opening and into the aperture so that at least one of the plurality of projections engages the fastener to restrict axial movement of the fastener.

17. The method of claim 16, wherein the step of disposing is performed at least partially on a tibia bone.

18. The method of claim 16, wherein the step of placing includes a step of selecting an axis for fastener placement from a set of two or more nonparallel axes along which the fastener can engage one or more of the plurality of projections.

19. The method of claim 16, wherein the aperture includes opposing ends, and wherein the step of placing disposes the threaded fastener in a spaced relationship with each of the opposing ends.

20. The method of claim 16, further comprising a step of forming a hole in bone along an axis extending through the opening and the aperture before the step of placing.

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**Prandi et al.**

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(54) **ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS**

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See application file for complete search history.

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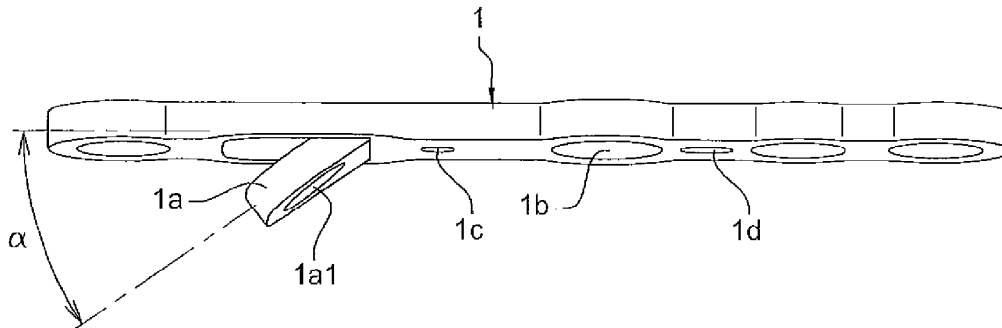
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(57) **ABSTRACT**

The invention relates to a plate fixed between two bone parts by way of screws engaged in holes formed in the thickness of the plate. The plate comprises an angled member or rib which is inclined according to an angle of between about 30° and 60° in relation to the plane defined by the plate. The angled member or rib has a hole for engaging a screw and is located in the central part of the width, over a determined part of the length of the plate, so that the screw brings the two bone parts into a compressive position.

**39 Claims, 2 Drawing Sheets**



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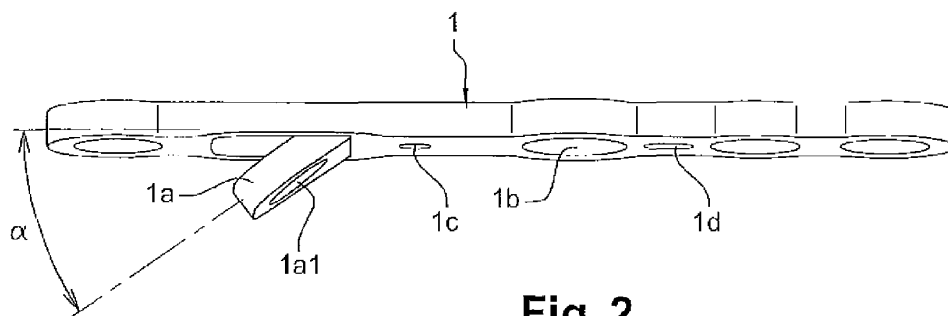
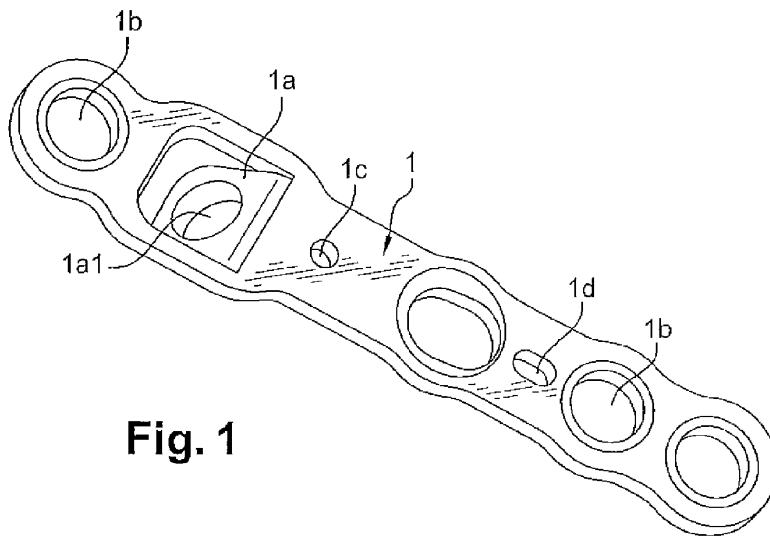
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**U.S. Patent**

**Oct. 15, 2013**

**Sheet 1 of 2**

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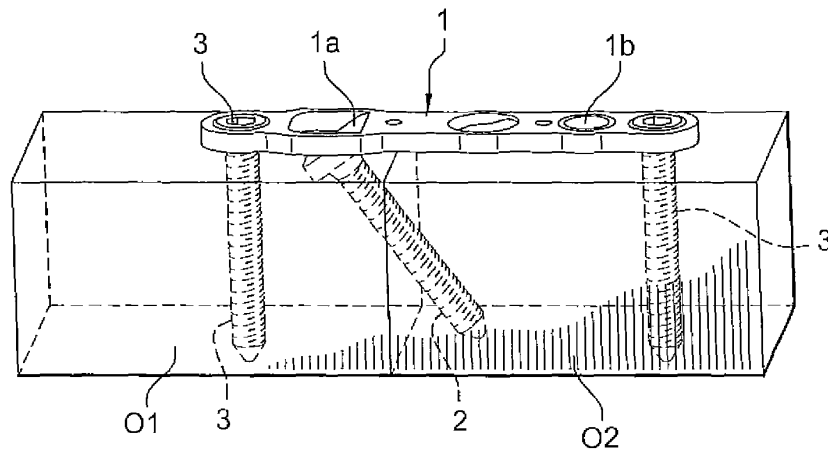


**U.S. Patent**

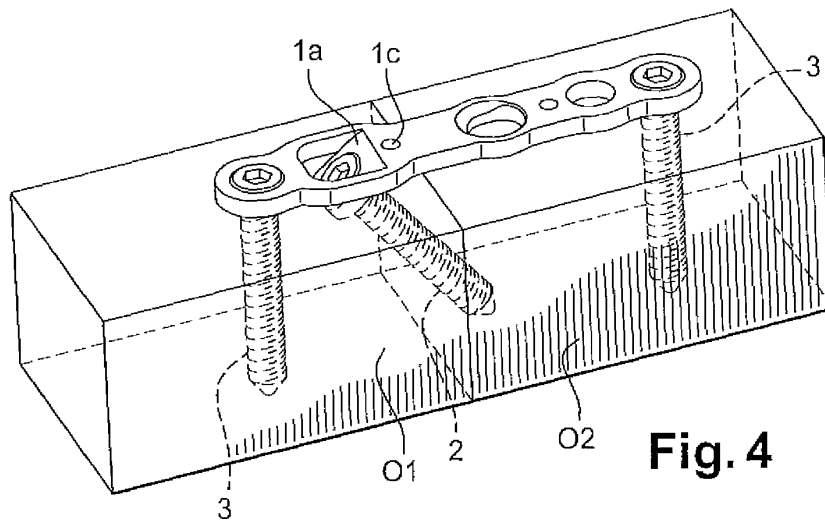
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**Fig. 3**



**Fig. 4**

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# ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

## CROSS REFERENCE TO RELATED APPLICATIONS

This application is the US national phase of PCT application PCT/FR2009/051879, filed 2 Oct. 2009, published 8 Apr. 2010 as 2010/037985, and claiming the priority of French patent application 0856694 itself filed 2 Oct. 2008, whose entire disclosures are herewith incorporated by reference.

The invention relates to the technical field of orthopedic implants.

More particularly, the invention relates to a plate for arthrodesis or osteosynthesis adapted to be fixed between two bone parts.

In a manner known to one having ordinary skill in the art, this type of plate generally has holes for engaging screws, allowing arthrodesis between two bones or osteosynthesis between two bone fragments. This is, for example, the case for bones of the hand or foot, without however excluding other applications, particularly in the field of the spine. Depending on the pathology to be treated, these plates can have a general rectilinear or other geometric shapes.

From this state of the art, one of the objects the invention proposes to attain is to improve, in a sure and efficient manner, compression in a precise direction between the bone parts subjected to the plate.

To attain the given object to enhance the compression between the two relative bone parts, according to the invention, the plate has a formation that orients at least one screw at an angle with respect to a plane defined by the plate, the angle being between about 30° and 60°.

According to an advantageous embodiment, the formation is a tab that is angled according to an angle between 30° and 60°, and having a hole for engaging the screw. The angled tab results from a cut out and a deformation of a portion of the plate.

In another embodiment, the formation is a hole angled at an angle between 30° and 60° for engaging the screw.

Considering the problem to be solved, the formation is located on a determined portion of the length of the plate so that the screw ensures the compression of the two bone parts.

The invention is described hereinafter in more detail, with reference to the attached drawing in which:

FIG. 1 is a perspective view of an embodiment of the plate;

FIG. 2 is a side view of the plate;

FIGS. 3 and 4 are perspective views showing the mounting of the plate between two bone parts and their orientation by means of the plate according to the invention, the bone parts being shown schematically.

According to the invention, the plate 1 has at least one formation 1a adapted to enable the positioning of at least one screw 2, at an angle  $\alpha$  of between 30° and 60° with respect to a plane of the plate (FIG. 2).

In one embodiment, the formation 1a is an angled tab cut out and deformed from the plate. For example, the deformation is made with a cutting-punching operation. This angled tab has a hole 1a1 for a screw 2. The angled tab 1a is positioned along the length of the plate so that after the screw 2 is fitted to it, the screw ensures the compression together of the two bone parts, as indicated below in the description.

In another embodiment, to allow for an angular orientation of the screw 2 according to an angle between about 30° and 60°, the formation 1a can be formed as an angled hole. It must be noted that the tab 1a enables adaptation of the angle as a

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function of the pathology to be treated, given that it is possible to deform this tab at will. In other words, the angle can be adjusted over a few degrees by the surgeon in the operating room, using an appropriate tool.

With reference to FIGS. 3 and 4 that show the positioning of the plate 1 between two bone parts O1 and O2:

Once the osteotomies have been carried out, a template of the plate, which does not have a guide formation, enables the position of this tab to be determined.

After determining the position of the tab, the surgeon makes a corresponding recess with the appropriate rasp.

Once the plate having the tab has been positioned, the surgeon sets one or two screws 3, on a side of the site of the osteosynthesis of the arthrodesis toward the tab. A temporary fastening pin can, possibly, be positioned in an complementary lug.

The screw 2 is then engaged in the hole 1a1 of the tab 1a to place the fracture in compression.

Once the compression has been done, the surgeon can screw one or several other additional fastening screws 3 and remove the temporary pin.

In a known manner, this plate 1 has smooth and/or threaded holes for the fastening screws 3 set in the bone parts O1 and O2 to engage in, as shown in FIGS. 3 and 4.

Similarly, the plate 1 can have at least one hole 1c for a pin for temporarily positioning the plate 1. Advantageously, the plate 1 can have a guide 1c for the insertion of a pin on the side of one of the bone parts O1 and another guide 1d for the insertion of another pin on the side of the other bone part O2.

Considering the effect of the desired compression, such as indicated above, the guide 1c is a circular hole whose diameter corresponds substantially to that of the pin 4, whereas the other guide 1d can be an elongated slot.

These provisions thus enable the bone to slide under the plate 1 as the screws are set, while ensuring compression along a precise direction, generally axially or parallel to the plate. The pins are of any known and appropriate type, and perfectly known to one having ordinary skill in the art.

The plate 1 can have several shapes, so that the holes 1a in particular can be aligned or arrayed, all or in part, according to the corners of a triangle or of a quadrilateral. These provisions, in triangle or in quadrilateral, of the screws, improve the stability of its mounting.

It must be noted also that the plate 1, no matter its shape, can be longitudinally bent so as to adapt to the curvature of the bone, consequently enabling the screws 2 to form an angle between them.

The advantages are readily apparent from the description.

The invention claimed is:

1. An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, each of the first and second holes being locking holes adapted to receive first and second fixation members, respectively, a central axis of the first hole being directed into the first but not the second bone, and a central axis of the second hole being directed into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, and a stop surface for

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engaging with a head of a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

2. The implant of claim 1, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

3. The implant of claim 1, wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

4. The implant of claim 3, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

5. The implant of claim 1, wherein the central axis of the third hole extends at an angle of between about 30° and 60° with respect to the longitudinal axis of the plate.

6. An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, the first and second holes being adapted to receive first and second fixation members, respectively, a central axis of the first hole extending into the first but not the second bone, and a central axis of the second hole extending into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

7. The implant of claim 6, wherein the first and second holes are locking holes.

8. The implant of claim 7, wherein the first and second holes include threading for engaging with the first and second fixation members.

9. The implant of claim 7, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

10. The implant of claim 9, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

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11. The implant of claim 6, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

12. The implant of claim 6, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

13. The implant of claim 12, wherein the third hole has a first diameter, and a head of the third fixation member has a second diameter, the second diameter being larger than the first diameter.

14. An implant adapted to span and fuse first and second bone parts, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, at least a first and a second of the plurality of holes being situated on a side of the plate corresponding to the first bone part, each of the first and second holes adapted to receive first and second fixation members, respectively; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes, the third hole being adapted to receive a third fixation member and being arranged below a guide slot formed in the plate, the guide slot being bounded by side walls extending through the top and bottom surfaces of the plate, wherein the side walls are dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole,

and wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend from the first bone part and into the second bone part.

15. The implant of claim 14, wherein the angled member includes a stop surface for engaging with a head of the third fixation member, the stop surface acting to prevent over-insertion of the third fixation member through the third hole.

16. The implant of claim 15, wherein the stop surface is situated below the guide slot.

17. The implant of claim 16, wherein a central axis of each of the first and second holes extends into the first bone part but not the second bone part.

18. The implant of claim 17, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bone parts.

19. The implant of claim 14, wherein some of the plurality of holes are arranged according to the corners of a triangle or a quadrilateral.

20. The implant of claim 17, wherein each of the first and second holes are locking holes.

21. The implant of claim 14, wherein the central axis of the third hole diverges from a central axis of at least one of the plurality of holes.

22. The implant of claim 21, wherein the at least one of the plurality of holes is a locking hole.

23. The implant of claim 14, wherein a portion of the implant is insertable in a cavity formed in at least one of the first and second bone parts.

24. The implant of claim 14, wherein the angled member is angled at between about 30° and 60° with respect to the longitudinal axis of the plate.

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25. The implant of claim 1, further comprising at least one hole adapted to receive a fixation pin.

26. The implant of claim 1, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

27. The implant of claim 26, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

28. The implant of claim 1, wherein the first and second holes include threading for engaging with the first and second fixation members.

29. The implant of claim 6, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

30. The implant of claim 29, wherein the central axis of the third hole extends at an angle of between about 30° and 60° with respect to the longitudinal axis of the plate.

31. A system including the implant of claim 1, in which the system further comprises screws for insertion into the plurality of holes of the implant.

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32. The system of claim 31, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

33. The system of claim 32, wherein the template does not include an angled member.

34. A system including the implant of claim 6, in which the system further comprises screws for insertion into the plurality of holes of the implant.

35. The system of claim 34, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

36. The system of claim 35, wherein the template does not include an angled member.

37. A system including the implant of claim 14, in which the system further comprises screws for insertion into the plurality of holes of the implant.

38. The system of claim 37, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

39. The system of claim 38, wherein the template does not include an angled member.

\* \* \* \* \*

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/FR2009/051879A. CLASSIFICATION OF SUBJECT MATTER  
INV. A61B17/80

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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Y	figures 1-3	2-3
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X	figure 3	
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Y	US 2005/070904 A1 (GERLACH DARIN [US] ET AL) 31 March 2005 (2005-03-31)	2-3
	paragraph [0054]; figure 10	
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Date of the actual completion of the international search

15 December 2009

Date of mailing of the international search report

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International application No  
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## C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	FR 590 290 A (COLLIN & CIE) 13 June 1925 (1925-06-13) figure 4	1

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Information on patent family members

International application No

PCT/FR2009/051879

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## RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale n°

PCT/FR2009/051879

A. CLASSEMENT DE L'OBJET DE LA DEMANDE  
INV. A61B17/80

Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

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Documentation minimale consultée (système de classification suivi des symboles de classement)  
A61B

Documentation consultée autre que la documentation minimale dans la mesure où ces documents relèvent des domaines sur lesquels a porté la recherche

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## C. DOCUMENTS CONSIDERES COMME PERTINENTS

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	figure 3	
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	alinéa [0054]; figure 10	
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"&amp;" document qui fait partie de la même famille de brevets

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## RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale n°  
PCT/FR2009/051879

C(suite). DOCUMENTS CONSIDERES COMME PERTINENTS		
Catégorie*	Identification des documents cités, avec, le cas échéant, l'indication des passages pertinents	no. des revendications visées
X	DE 36 30 862 A1 (MECRON MED PROD GMBH [DE]) 17 mars 1988 (1988-03-17) figure 1	1
A	FR 590 290 A (COLLIN & CIE) 13 juin 1925 (1925-06-13) figure 4	1

**RAPPORT DE RECHERCHE INTERNATIONALE**

Renseignements relatifs aux membres de familles de brevets

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Document brevet cité au rapport de recherche		Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
DE 8227727	U1	16-12-1982	AUCUN	
WO 02098306	A1	12-12-2002	US 2004172028 A1	02-09-2004
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			WO 2005032386 A1	14-04-2005
DE 3630862	A1	17-03-1988	AUCUN	
FR 590290	A	13-06-1925	AUCUN	

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS		
First Named Inventor/Applicant Name:		Bernard PRANDI		
Filer:		Andrew Wilford		
Attorney Docket Number:		30064		
Filed as Small Entity				
U.S. National Stage under 35 USC 371 Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
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<b>Miscellaneous-Filing:</b>				
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<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard PRANDI
<b>Customer Number:</b>	00535
<b>Filer:</b>	Andrew Wilford
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File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	30064AppDatSht1.pdf	40141	no	2
			f4cae578825cd1004176e5480f5e7de0296a0fc4		
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
2		WO002010037985.pdf	505318	yes	16
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	Document Description		Start	End	
	Abstract		1	2	
	Specification - Not in English		3	7	
	Claims		8	8	
	Drawings-only black and white line drawings		9	10	
	Documents submitted with 371 Applications		11	16	
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Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	32783	no	2
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**New Applications Under 35 U.S.C. 111**

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**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Application Data Sheet

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Application Information::

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Title Line Two:: **PLATE TO BE FIXED BETWEEN TWO BONE**

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CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,  
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(54) Title : ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

(54) Titre : IMPLANT ORTHOPÉDIQUE SOUS FORME D'UNE PLAQUE DESTINÉE À ÊTRE FIXÉE ENTRE DEUX PARTIES D'OS

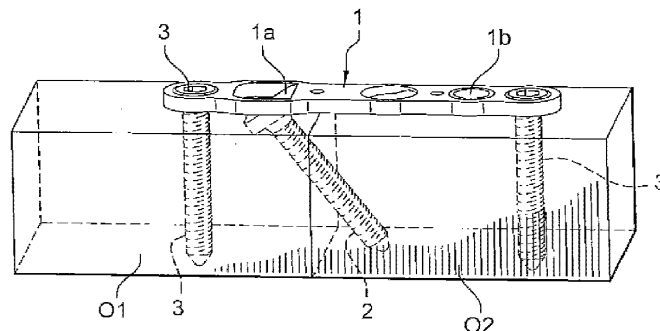


Fig. 3

(57) Abstract : The invention relates to a plate (1) fixed between two bone parts by means of screws engaged in holes (1b) formed in the thickness of said plate. The plate (1) comprises a rib which is inclined according to an angle of between 30° and 60° in relation to the plane defined by the plate and has a hole (1a) for engaging a screw (2). Said rib is located in the central part of the width, over a determined part of the length of the plate so that the screw (2) brings the two bone parts into the compressive position.

(57) Abrégé : La plaque (1) est fixée entre deux parties d'os au moyen de vis engagées dans des trous (1b) formés dans l'épaisseur de ladite plaque. La plaque (1) présente une nervure inclinée selon un angle compris entre 30° et 60° par rapport au plan défini par ladite plaque, et présentant un trou (1a)

[Suite sur la page suivante]

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pour l'engagement d'une vis (2), ladite nervure étant située dans la partie médiane, en largeur, sur une partie déterminée de la longueur de la plaque pour que la vis (2) assure la mise en compression des deux parties d'os.

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**IMPLANT ORTHOPEDIQUE SOUS FORME D'UNE PLAQUE  
DESTINEE A ETRE FIXEE ENTRE DEUX PARTIES D'OS.**

5 L'invention se rattache au secteur technique des implants orthopédiques.

Plus particulièrement, l'invention concerne une plaque pour arthrodèse ou ostéosynthèse destinée à être fixée entre deux parties d'os.

10 D'une manière parfaitement connue pour un homme du métier, ce type de plaque comprend, généralement, des trous pour l'engagement de vis permettant de réaliser une arthrodèse entre deux os ou une ostéosynthèse entre deux fragments osseux. C'est le cas, par exemple, pour les os de la main ou du pied, sans pour cela exclure d'autres applications, notamment  
15 dans le domaine du rachis. En fonction du cas pathologique à traiter, ces plaques peuvent être de forme générale rectiligne ou présenter d'autres formes géométriques.

A partir de cet état de la technique, l'un des problèmes que se  
20 propose de résoudre l'invention est d'améliorer, d'une manière sure et efficace, la compression entre les parties d'os assujetties à la plaque et selon une direction précise.

Pour résoudre le problème posé d'améliorer la compression entre les  
25 deux parties d'os considérées, selon l'invention, la plaque présente au moins un agencement apte à permettre de positionner au moins une vis d'une manière inclinée par rapport au plan défini par ladite plaque selon un angle compris entre 30° et 60° environ.

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Selon une forme avantageuse de réalisation, l'agencement est constitué par une zone inclinée selon l'angle compris entre 30° et 60°, et présentant un trou pour l'engagement de la vis. La zone inclinée résulte d'une découpe et d'une déformation d'une partie de la plaque.

5

Dans une autre forme de réalisation, l'agencement est constitué par un trou incliné selon l'angle compris entre 30° et 60° pour l'engagement de la vis.

10

Compte tenu du problème posé à résoudre, l'agencement est situé sur une partie déterminée de la longueur de la plaque pour que la vis assure la mise en compression des deux parties d'os.

15

L'invention est exposée ci-après plus en détail à l'aide des figures des dessins annexés dans lesquels :

- la figure 1 est une vue en perspective d'une forme de réalisation de la plaque ;
- la figure 2 est une vue de profil de la plaque ;
- les figures 3 et 4 sont des vues en perspective montrant le montage de la plaque entre deux parties d'os et la composition de ces dernières, au moyen de la plaque selon l'invention, les parties d'os étant présentées d'une manière schématique.

20

Selon l'invention, la plaque (1) présente au moins un agencement (1a) apte à permettre de positionner au moins une vis (2), d'une manière inclinée, selon un angle  $\alpha$  compris entre 30° et 60° par rapport au plan défini par ladite plaque (figure 2)

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Dans une forme de réalisation, l'agencement (1a) est constitué par une zone inclinée qui résulte d'une découpe et d'une déformation d'une partie de la plaque. Par exemple, la déformation est consécutive à une opération de découpage – poinçonnage. Cette zone inclinée constitue une nervure qui présente un trou (1a1) pour l'engagement de la vis (2). La nervure inclinée (1a) est formée sur une partie déterminée de la longueur de la plaque pour qu'après engagement, la vis (2) assure la mise en compression des deux parties d'os, comme il sera indiqué dans la suite de la description.

10

Dans une autre forme de réalisation, pour permettre une orientation angulaire de la vis (2), selon un angle compris entre 30° et 60° environ, l'agencement (1a) peut être constitué par un trou incliné. A noter que la nervure (1a) permet une adaptation de l'angle en fonction du cas pathologique à traiter étant donné qu'il est possible de déformer à volonté cette nervure. Autrement dit, l'angle peut être réglé directement par le chirurgien sur quelques degrés en bloc opératoire avec un instrument adapté.

15

On renvoie aux figures 3 et 4 qui montrent le positionnement de la plaque (1) entre deux parties d'os (O1) et (O2) :

- Après réalisation des ostéotomies, un gabarit de la plaque, qui ne présente pas de nervures, permet de déterminer la position de cette nervure.
- Après avoir déterminé le positionnement de la nervure, le chirurgien réalise un logement correspondant, avec une râpe adaptée.
- Après positionnement de la plaque présentant la nervure, le chirurgien met en place une ou deux vis (3), d'un côté du foyer d'ostéosynthèse de

20

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l'arthrodèse considéré du côté de la nervure. On peut positionner, éventuellement, une broche de fixation temporaire dans un plot adapté.

- La vis (2) est ensuite engagée dans le trou (1a1) de la nervure (1a) pour mettre le foyer de fracture en compression.
- 5 • Une fois la compression effectuée, le chirurgien peut visser une ou plusieurs autres vis (3) de fixation complémentaire et retirer la broche temporaire de maintien

10 D'une manière connue, cette plaque (1) présente des trous lisses et/ou taraudés (1b) pour l'engagement des vis de fixation (3) vissées dans les parties d'os (O1) et (O2), comme il ressort des figures 3 et 4.

15 De même, la plaque (1) peut présenter au moins un logement (1c) pour l'introduction d'une broche en vue d'assurer une fixation temporaire de ladite plaque (1). Avantagusement, la plaque (1) peut présenter un logement (1c) pour l'introduction d'une broche du côté de l'une des parties de l'os (O1) et un autre logement (1d) pour l'introduction d'une autre broche du côté de l'autre partie d'os (O2).

20 Compte tenu de l'effet de compression recherchée, telle qu'indiquée précédemment, le logement (1c) est constitué par un trou circulaire dont le diamètre correspond sensiblement à celui de la broche (4), tandis que l'autre logement (1d) peut être constitué par une lumière oblongue.

25 Ces dispositions permettent donc à l'os de coulisser sous la plaque (1) au moment du vissage, tout en assurant une compression selon une direction précise, généralement suivant l'axe de la plaque. Les broches sont de tout type connu et approprié, et parfaitement connu pour un homme du métier.

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La plaque (1) peut présenter différentes formes géométriques, de sorte que les trous (1a) notamment peuvent être alignés ou être disposés, en totalité ou en partie, selon les sommets d'un triangle ou d'un quadrilatère. Ces dispositions, en triangle ou en quadrilatère des vis, améliorent la

5 stabilité du montage.

A noter également que la plaque (1), quelle que soit sa forme géométrique, peut être cintrée longitudinalement, pour s'adapter à la courbure de l'os permettant, en conséquence, aux vis (2) de former un angle

10 entre elles.

Les avantages ressortent bien de la description.



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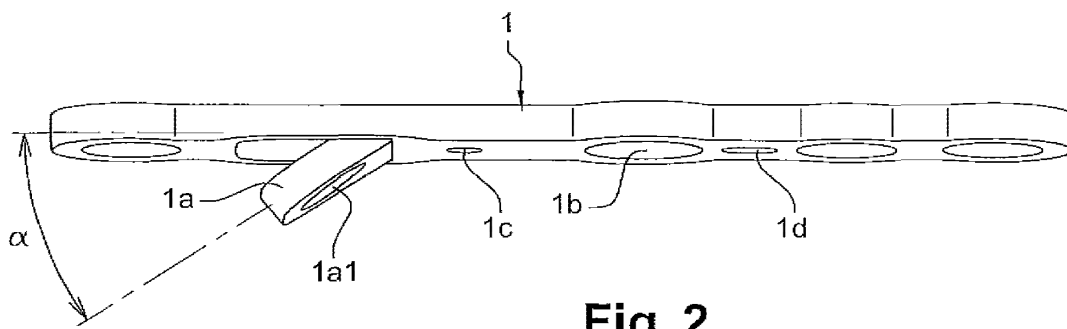
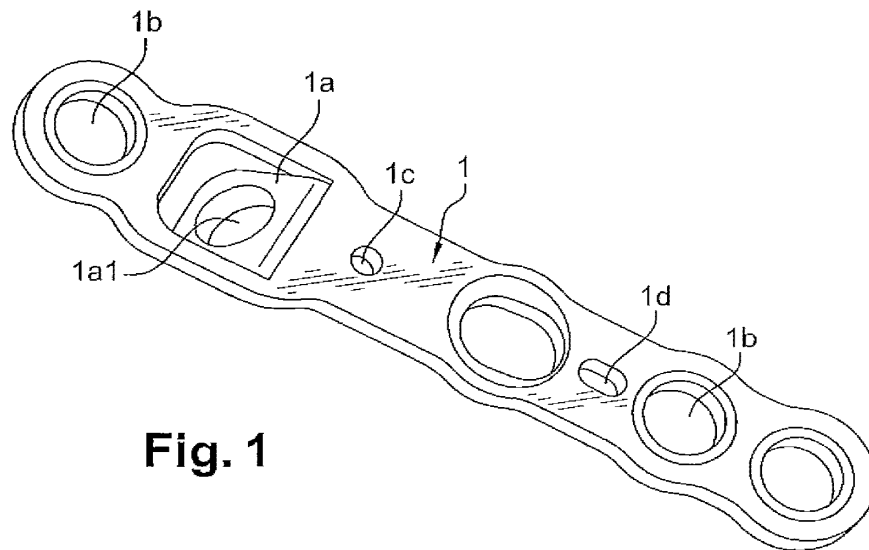
## REVENDICATIONS

- 5 -1- Implant orthopédique sous forme d'une plaque (1) destinée à être fixée entre deux parties d'os au moyen de vis engagées dans des trous (1b) formés dans l'épaisseur de ladite plaque, caractérisé en ce que la plaque (1) présente une nervure inclinée selon un angle compris entre 30° et 60° par rapport au plan défini par ladite plaque, et présentant un trou (1a1) pour l'engagement d'une vis (2), ladite nervure étant située dans la partie médiane, en largeur, sur une partie déterminée de la longueur de la plaque pour que la vis (2) assure la mise en compression des deux parties d'os.
- 10 -2- Implant selon la revendication 1, caractérisé en ce que la plaque présente un logement pour l'introduction d'une broche du côté de l'une des parties d'os et un autre logement pour l'introduction d'une broche du côté de l'autre partie d'os.
- 15 -3- Implant selon la revendication 2, caractérisé en ce que l'un des logements est constitué par un trou circulaire (1c) dont le diamètre correspond sensiblement à celui de la broche, tandis que l'autre logement est constitué par une lumière oblongue.
- 20 -4- Implant selon l'une des revendications 1 à 3, caractérisé en ce que la plaque présente des trous lisses et/ou taraudés destinés à recevoir des vis de fixation avec les parties d'os.
- 25 -5- Implant selon la revendication 4, caractérisé en ce que les différents trous sont alignés.
- 30 -6- Implant selon la revendication 4, caractérisé en ce que certains des trous sont disposés selon le sommet d'un triangle ou d'un quadrilatère.

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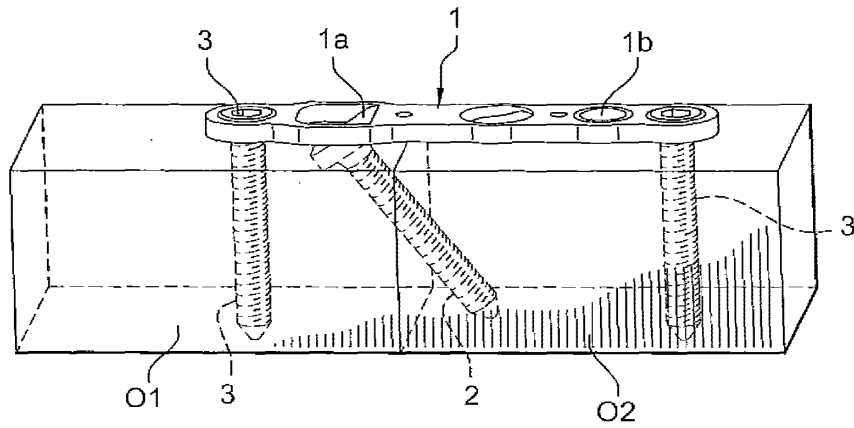
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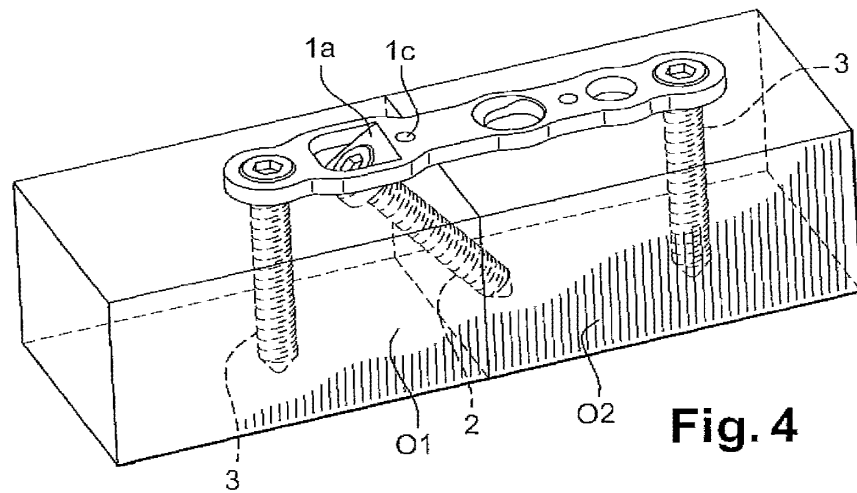
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2 / 2



**Fig. 3**



**Fig. 4**

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- (72) Inventeurs; et
- (75) Inventeurs/Déposants (pour US seulement) : PRANDI,  
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CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,  
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ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,  
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- (84) États désignés (sauf indication contraire, pour tout titre  
de protection régionale disponible) : ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), eurasien (AM, AZ, BY, KG, KZ, MD, RU, TJ,  
TM), européen (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,  
MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM,  
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- (74) Mandataires : THIVILLIER, Patrick et al.; Cabinet  
Laurent & Charras, 3 Place de l'Hôtel de Ville, B.P. N°  
203, F-42005 Saint Etienne Cedex 1 (FR).

(54) Title : ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

(54) Titre : IMPLANT ORTHOPÉDIQUE SOUS FORME D'UNE PLAQUE DESTINÉE À ÊTRE FIXÉE ENTRE DEUX PARTIES D'OS

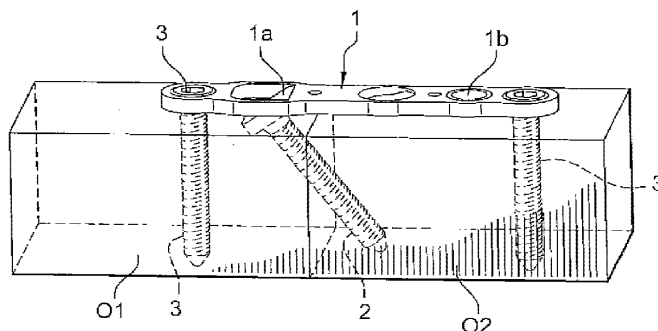


Fig. 3

(57) Abstract : The invention relates to a plate (1) fixed between two bone parts by means of screws engaged in holes (1b) formed in the thickness of said plate. The plate (1) comprises a rib which is inclined according to an angle of between 30° and 60° in relation to the plane defined by the plate and has a hole (1a) for engaging a screw (2). Said rib is located in the central part of the width, over a determined part of the length of the plate so that the screw (2) brings the two bone parts into the compressive position.

(57) Abrégé : La plaque (1) est fixée entre deux parties d'os au moyen de vis engagées dans des trous (1b) formés dans l'épaisseur de ladite plaque. La plaque (1) présente une nervure inclinée selon un angle compris entre 30° et 60° par rapport au plan défini par ladite plaque, et présentant un trou (1a)

[Suite sur la page suivante]

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pour l'engagement d'une vis (2), ladite nervure étant située dans la partie médiane, en largeur, sur une partie déterminée de la longueur de la plaque pour que la vis (2) assure la mise en compression des deux parties d'os.

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**IMPLANT ORTHOPEDIQUE SOUS FORME D'UNE PLAQUE  
DESTINEE A ETRE FIXEE ENTRE DEUX PARTIES D'OS.**

5 L'invention se rattache au secteur technique des implants orthopédiques.

Plus particulièrement, l'invention concerne une plaque pour arthrodèse ou ostéosynthèse destinée à être fixée entre deux parties d'os.

10 D'une manière parfaitement connue pour un homme du métier, ce type de plaque comprend, généralement, des trous pour l'engagement de vis permettant de réaliser une arthrodèse entre deux os ou une ostéosynthèse entre deux fragments osseux. C'est le cas, par exemple, pour les os de la main ou du pied, sans pour cela exclure d'autres applications, notamment  
15 dans le domaine du rachis. En fonction du cas pathologique à traiter, ces plaques peuvent être de forme générale rectiligne ou présenter d'autres formes géométriques.

A partir de cet état de la technique, l'un des problèmes que se  
20 propose de résoudre l'invention est d'améliorer, d'une manière sure et efficace, la compression entre les parties d'os assujetties à la plaque et selon une direction précise.

Pour résoudre le problème posé d'améliorer la compression entre les  
25 deux parties d'os considérées, selon l'invention, la plaque présente au moins un agencement apte à permettre de positionner au moins une vis d'une manière inclinée par rapport au plan défini par ladite plaque selon un angle compris entre 30° et 60° environ.

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Selon une forme avantageuse de réalisation, l'agencement est constitué par une zone inclinée selon l'angle compris entre 30° et 60°, et présentant un trou pour l'engagement de la vis. La zone inclinée résulte d'une découpe et d'une déformation d'une partie de la plaque.

5

Dans une autre forme de réalisation, l'agencement est constitué par un trou incliné selon l'angle compris entre 30° et 60° pour l'engagement de la vis.

10

Compte tenu du problème posé à résoudre, l'agencement est situé sur une partie déterminée de la longueur de la plaque pour que la vis assure la mise en compression des deux parties d'os.

15

L'invention est exposée ci-après plus en détail à l'aide des figures des dessins annexés dans lesquels :

- la figure 1 est une vue en perspective d'une forme de réalisation de la plaque ;
- la figure 2 est une vue de profil de la plaque ;
- les figures 3 et 4 sont des vues en perspective montrant le montage de la plaque entre deux parties d'os et la composition de ces dernières, au moyen de la plaque selon l'invention, les parties d'os étant présentées d'une manière schématique.

20

Selon l'invention, la plaque (1) présente au moins un agencement (1a) apte à permettre de positionner au moins une vis (2), d'une manière inclinée, selon un angle  $\alpha$  compris entre 30° et 60° par rapport au plan défini par ladite plaque (figure 2)

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Dans une forme de réalisation, l'agencement (1a) est constitué par une zone inclinée qui résulte d'une découpe et d'une déformation d'une partie de la plaque. Par exemple, la déformation est consécutive à une opération de découpage – poinçonnage. Cette zone inclinée constitue une nervure qui présente un trou (1a1) pour l'engagement de la vis (2). La nervure inclinée (1a) est formée sur une partie déterminée de la longueur de la plaque pour qu'après engagement, la vis (2) assure la mise en compression des deux parties d'os, comme il sera indiqué dans la suite de la description.

10

Dans une autre forme de réalisation, pour permettre une orientation angulaire de la vis (2), selon un angle compris entre 30° et 60° environ, l'agencement (1a) peut être constitué par un trou incliné. A noter que la nervure (1a) permet une adaptation de l'angle en fonction du cas pathologique à traiter étant donné qu'il est possible de déformer à volonté cette nervure. Autrement dit, l'angle peut être réglé directement par le chirurgien sur quelques degrés en bloc opératoire avec un instrument adapté.

15

On renvoie aux figures 3 et 4 qui montrent le positionnement de la plaque (1) entre deux parties d'os (O1) et (O2) :

- Après réalisation des ostéotomies, un gabarit de la plaque, qui ne présente pas de nervures, permet de déterminer la position de cette nervure.
- Après avoir déterminé le positionnement de la nervure, le chirurgien réalise un logement correspondant, avec une râpe adaptée.
- Après positionnement de la plaque présentant la nervure, le chirurgien met en place une ou deux vis (3), d'un côté du foyer d'ostéosynthèse de

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l'arthrodèse considéré du côté de la nervure. On peut positionner, éventuellement, une broche de fixation temporaire dans un plot adapté.

- La vis (2) est ensuite engagée dans le trou (1a1) de la nervure (1a) pour mettre le foyer de fracture en compression.
- 5 • Une fois la compression effectuée, le chirurgien peut visser une ou plusieurs autres vis (3) de fixation complémentaire et retirer la broche temporaire de maintien

10 D'une manière connue, cette plaque (1) présente des trous lisses et/ou taraudés (1b) pour l'engagement des vis de fixation (3) vissées dans les parties d'os (O1) et (O2), comme il ressort des figures 3 et 4.

15 De même, la plaque (1) peut présenter au moins un logement (1c) pour l'introduction d'une broche en vue d'assurer une fixation temporaire de ladite plaque (1). Avantagusement, la plaque (1) peut présenter un logement (1c) pour l'introduction d'une broche du côté de l'une des parties de l'os (O1) et un autre logement (1d) pour l'introduction d'une autre broche du côté de l'autre partie d'os (O2).

20 Compte tenu de l'effet de compression recherchée, telle qu'indiquée précédemment, le logement (1c) est constitué par un trou circulaire dont le diamètre correspond sensiblement à celui de la broche (4), tandis que l'autre logement (1d) peut être constitué par une lumière oblongue.

25 Ces dispositions permettent donc à l'os de coulisser sous la plaque (1) au moment du vissage, tout en assurant une compression selon une direction précise, généralement suivant l'axe de la plaque. Les broches sont de tout type connu et approprié, et parfaitement connu pour un homme du métier.

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La plaque (1) peut présenter différentes formes géométriques, de sorte que les trous (1a) notamment peuvent être alignés ou être disposés, en totalité ou en partie, selon les sommets d'un triangle ou d'un quadrilatère. Ces dispositions, en triangle ou en quadrilatère des vis, améliorent la stabilité du montage.

A noter également que la plaque (1), quelle que soit sa forme géométrique, peut être cintrée longitudinalement, pour s'adapter à la courbure de l'os permettant, en conséquence, aux vis (2) de former un angle entre elles.

Les avantages ressortent bien de la description.

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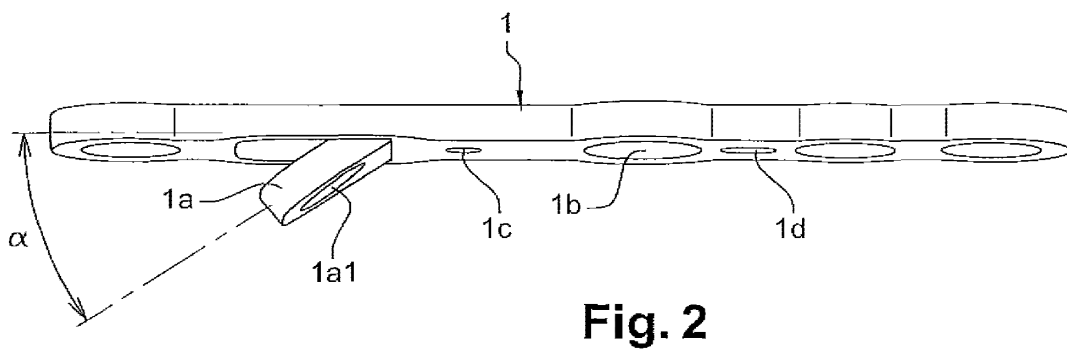
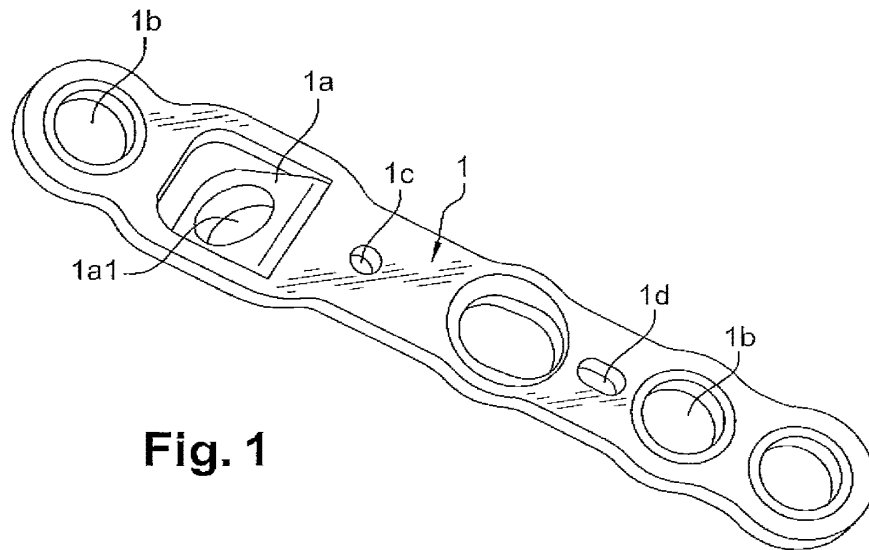
## REVENDICATIONS

- 5 -1- Implant orthopédique sous forme d'une plaque (1) destinée à être fixée entre deux parties d'os au moyen de vis engagées dans des trous (1b) formés dans l'épaisseur de ladite plaque, caractérisé en ce que la plaque (1) présente une nervure inclinée selon un angle compris entre 30° et 60° par rapport au plan défini par ladite plaque, et présentant un trou (1a1) pour l'engagement d'une vis (2), ladite nervure étant située dans la partie médiane, en largeur, sur une partie déterminée de la longueur de la plaque pour que la vis (2) assure la mise en compression des deux parties d'os.
- 10 -2- Implant selon la revendication 1, caractérisé en ce que la plaque présente un logement pour l'introduction d'une broche du côté de l'une des parties d'os et un autre logement pour l'introduction d'une broche du côté de l'autre partie d'os.
- 15 -3- Implant selon la revendication 2, caractérisé en ce que l'un des logements est constitué par un trou circulaire (1c) dont le diamètre correspond sensiblement à celui de la broche, tandis que l'autre logement est constitué par une lumière oblongue.
- 20 -4- Implant selon l'une des revendications 1 à 3, caractérisé en ce que la plaque présente des trous lisses et/ou taraudés destinés à recevoir des vis de fixation avec les parties d'os.
- 25 -5- Implant selon la revendication 4, caractérisé en ce que les différents trous sont alignés.
- 30 -6- Implant selon la revendication 4, caractérisé en ce que certains des trous sont disposés selon le sommet d'un triangle ou d'un quadrilatère.

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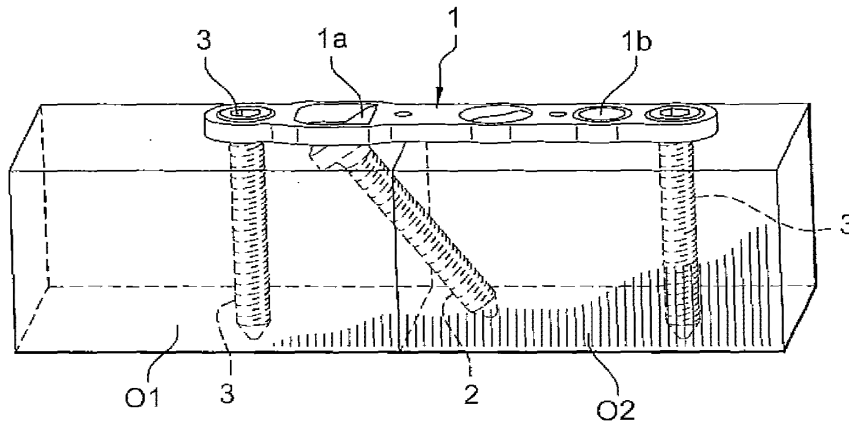
1/2



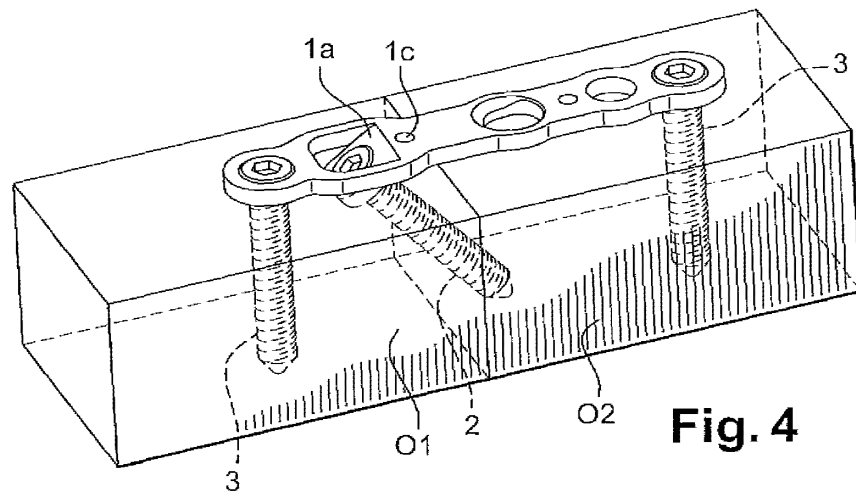
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**Fig. 3**



**Fig. 4**

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/FR2009/051879

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. A61B17/80

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 82 27 727 U1 (HOWMEDICA INTERNATIONAL, INC. ZWEIGNIEDERLASSUNG KIEL, 2301 SCHOENKIRC) 16 December 1982 (1982-12-16)	1, 4-6
Y	figures 1-3	2-3
X	WO 02/098306 A1 (AUSTRALIAN SURGICAL DESIGN AND [AU]; ROGER GREGORY JAMES [AU]) 12 December 2002 (2002-12-12)	1, 4-6
	figure 3	
X	US 2008/114360 A1 (DA FROTA CARRERA EDUARDO [BR]) 15 May 2008 (2008-05-15)	1, 4-6
	figure 3	
Y	US 2005/070904 A1 (GERLACH DARIN [US] ET AL) 31 March 2005 (2005-03-31)	2-3
	paragraph [0054]; figure 10	
	----- -/-	

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

## \* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search

15 December 2009

Date of mailing of the international search report

13/01/2010

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
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Authorized officer

Fernández Arillo, J

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/FR2009/051879

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 36 30 862 A1 (MECRON MED PROD GMBH [DE]) 17 March 1988 (1988-03-17) figure 1	1
A	FR 590 290 A (COLLIN & CIE) 13 June 1925 (1925-06-13) figure 4	1

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No

PCT/FR2009/051879

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 8227727	U1	16-12-1982	NONE	
WO 02098306	A1	12-12-2002	US 2004172028 A1	02-09-2004
US 2008114360	A1	15-05-2008	NONE	
US 2005070904	A1	31-03-2005	AU 2004277946 A1	14-04-2005
			CA 2537438 A1	14-04-2005
			EP 1670373 A1	21-06-2006
			JP 2007507296 T	29-03-2007
			US 2007162020 A1	12-07-2007
			US 2005107796 A1	19-05-2005
			WO 2005032386 A1	14-04-2005
DE 3630862	A1	17-03-1988	NONE	
FR 590290	A	13-06-1925	NONE	



## RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale n°

PCT/FR2009/051879

A. CLASSEMENT DE L'OBJET DE LA DEMANDE  
INV. A61B17/80

Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

## B. DOMAINES SUR LESQUELS LA RECHERCHE A PORTE

Documentation minimale consultée (système de classification suivi des symboles de classement)  
A61B

Documentation consultée autre que la documentation minimale dans la mesure où ces documents relèvent des domaines sur lesquels a porté la recherche

Base de données électronique consultée au cours de la recherche internationale (nom de la base de données, et si cela est réalisable, termes de recherche utilisés)  
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## C. DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie*	Identification des documents cités, avec, le cas échéant, l'indication des passages pertinents	no. des revendications visées
X	DE 82 27 727 U1 (HOWMEDICA INTERNATIONAL, INC. ZWEIGNIEDERLASSUNG KIEL, 2301 SCHOENKIRC) 16 décembre 1982 (1982-12-16)	1,4-6
Y	figures 1-3	2-3
X	WO 02/098306 A1 (AUSTRALIAN SURGICAL DESIGN AND [AU]; ROGER GREGORY JAMES [AU]) 12 décembre 2002 (2002-12-12)	1,4-6
	figure 3	
X	US 2008/114360 A1 (DA FROTA CARRERA EDUARDO [BR]) 15 mai 2008 (2008-05-15)	1,4-6
	figure 3	
Y	US 2005/070904 A1 (GERLACH DARIN [US] ET AL) 31 mars 2005 (2005-03-31)	2-3
	alinéa [0054]; figure 10	
	----- -/-	



Voir la suite du cadre C pour la fin de la liste des documents



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Date d'expédition du présent rapport de recherche internationale

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Fonctionnaire autorisé

Fernández Arillo, J

## RAPPORT DE RECHERCHE INTERNATIONALE

Demande internationale n°  
PCT/FR2009/051879

C(suite). DOCUMENTS CONSIDERES COMME PERTINENTS		
Catégorie*	Identification des documents cités, avec, le cas échéant, l'indication des passages pertinents	no. des revendications visées
X	DE 36 30 862 A1 (MECRON MED PROD GMBH [DE]) 17 mars 1988 (1988-03-17) figure 1	1
A	FR 590 290 A (COLLIN & CIE) 13 juin 1925 (1925-06-13) figure 4	1

**RAPPORT DE RECHERCHE INTERNATIONALE**

Renseignements relatifs aux membres de familles de brevets

Demande internationale n°

PCT/FR2009/051879

Document brevet cité au rapport de recherche		Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
DE 8227727	U1	16-12-1982	AUCUN	
WO 02098306	A1	12-12-2002	US 2004172028 A1	02-09-2004
US 2008114360	A1	15-05-2008	AUCUN	
US 2005070904	A1	31-03-2005	AU 2004277946 A1	14-04-2005
			CA 2537438 A1	14-04-2005
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DE 3630862	A1	17-03-1988	AUCUN	
FR 590290	A	13-06-1925	AUCUN	

## Document made available under the Patent Cooperation Treaty (PCT)

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Date of receipt at the International Bureau: 26 November 2009 (26.11.2009)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland  
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse

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PCT/FR 2009 / 0 5 1 8 7 9



# d'invention

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Le Chef du Département des brevets

A handwritten signature in black ink, appearing to read 'M. Planche', is written over a horizontal line.

Martine PLANCHE




**BREVET D'INVENTION**  
**CERTIFICAT D'UTILITE**


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 75800 Paris Cédex 08  
 Téléphone: 0820 213 213 Télécopie: 01.53.04.52.65

Code de la propriété intellectuelle-livre VI

REQUÊTE EN DÉLIVRANCE

DATE DE REMISE DES PIÈCES: <b>02/10/2008</b> N° D'ENREGISTREMENT NATIONAL: <b>0856694</b> DÉPARTEMENT DE DÉPÔT: DATE DE DÉPÔT:	Patrick THIVILLIER CABINET LAURENT & CHARRAS 3 Place de l'Hôtel de Ville B.P. N° 203 42005 SAINT ETIENNE CEDEX 1 France
Vos références pour ce dossier: M639-B-26622	

<b>1 NATURE DE LA DEMANDE</b>							
Demande de brevet							
<b>2 TITRE DE L'INVENTION</b>							
	IMPLANT ORTHOPEDIQUE SOUS FORME D'UNE PLAQUE DESTINEE A ETRE FIXEE ENTRE DEUX PARTIES D'OS						
<b>3 DECLARATION DE PRIORITE OU REQUETE DU BENEFICE DE LA DATE DE DEPOT D'UNE DEMANDE ANTERIEURE FRANCAISE</b>	<table border="1"> <thead> <tr> <th>Pays ou organisation</th> <th>Date</th> <th>N°</th> </tr> </thead> <tbody> <tr> <td colspan="3"> </td> </tr> </tbody> </table>	Pays ou organisation	Date	N°			
Pays ou organisation	Date	N°					
<b>4-1 DEMANDEUR</b>							
Nom Rue Code postal et ville Pays Nationalité Forme juridique N° SIREN	MEMOMETAL TECHNOLOGIES Campus de Ker Lann Rue Blaise Pascal 35170 BRUZ France France Société par actions simplifiée (SAS) 444 042 287						
<b>5A MANDATAIRE</b>							
Nom Prénom Qualité Cabinet ou Société Rue Code postal et ville N° de téléphone N° de télécopie Courrier électronique	THIVILLIER Patrick CPI: 92-1239, Pas de pouvoir CABINET LAURENT & CHARRAS 3 Place de l'Hôtel de Ville B.P. N° 203 42005 SAINT ETIENNE CEDEX 1 04.77.49.57.75. 04.77.41.50.02. patrick.thivillier@laurentcharras.com						

<b>6 DOCUMENTS ET FICHIERS JOINTS</b>		Fichier électronique	Pages	Détails	
Texte du brevet		textebrevet.pdf	8	D 5, R 2, AB 1	
Dessins		dessins.pdf	3	page 3, figures 4, Abrégé: page 1, Fig.3	
<b>7 MODE DE PAIEMENT</b>					
Mode de paiement		Prélèvement du compte courant			
Numéro du compte client		230			
<b>8 RAPPORT DE RECHERCHE</b>					
Etablissement immédiat					
<b>9 REDEVANCES JOINTES</b>		Devise	Taux	Quantité	Montant à payer
062R Dépôt à taux réduit		EURO	13.00	1.00	13.00
063R Rapport de recherche à taux réduit		EURO	250.00	1.00	250.00
Total à acquitter		EURO			263.00

La loi n°78-17 du 6 janvier 1978 relative à l'informatique aux fichiers et aux libertés s'applique aux réponses faites à ce formulaire.  
Elle garantit un droit d'accès et de rectification pour les données vous concernant auprès de l'INPI.

**Signé par**

Signataire: FR, Cabinet LAURENT ET CHARRAS, Patrick THIVILLIER

Emetteur du certificat: FR, INPI, INPI-EN-LIGNE 1.0

**Fonction**

(Mandataire)





## BREVET D'INVENTION CERTIFICAT D'UTILITE

### Réception électronique de la soumission

Il est certifié par la présente qu'une demande de brevet (ou d'un certificat d'utilité) a été reçue par le biais du dépôt électronique sécurisé de l'INPI. Après réception, un numéro d'enregistrement et une date de réception ont été automatiquement attribués.

Numéro de demande	0856694	
Numéro de soumission	1000038510	
Date de réception	02 octobre 2008	
Vos références	M639-B-26622	
Demandeur	MEMOMETAL TECHNOLOGIES	
Pays	FR	
Titre de l'invention	IMPLANT ORTHOPEDIQUE SOUS FORME D'UNE PLAQUE DESTINEE A ETRE FIXEE ENTRE DEUX PARTIES D'OS	
Documents envoyés	package-data.xml request.xml application-body.xml textebrevet.pdf (8 p.) Design.PDF (1 p.) ValidLog.PDF (1 p.)	FR-office-specific-info.xml fee-sheet.xml indication-bio-deposit.xml dessins.pdf (3 p.) Requetefr.PDF (2 p.)
Déposé par	CN=Patrick THIVILLIER,O=Cabinet LAURENT ET CHARRAS,C=FR	
Méthode de dépôt	Dépôt électronique	
Date et heure de réception électronique	02 octobre 2008, 18:43:54 (CEST)	
Empreinte officielle du dépôt	A8:41:E4:4F:DF:C5:65:F3:78:FC:52:E0:49:3F:2E:A5:D9:4F:C6:51	

/INPI, section dépôt/

**BREVET D'INVENTION****CERTIFICAT D'UTILITE**

Code de la propriété intellectuelle - Livre VI



26 bis, rue de Saint Pétersbourg - 75800 Paris Cedex 08

Pour vous informer : INPI Direct 0820 210 211

Pour déposer par télécopie : 33 (0)1 53 04 52 65

**DÉSIGNATION D'INVENTEUR(S)** Page N° 1. / 1.

(À fournir dans le cas où les demandeurs et les inventeurs ne sont pas les mêmes personnes)



Cet imprimé est à remplir lisiblement à l'encre noire

DB 113 @ W / 010107

<b>Vos références pour ce dossier (facultatif)</b>		M639-B-26622 FR
<b>N° D'ENREGISTREMENT NATIONAL</b>		08 56694
<b>TITRE DE L'INVENTION (200 caractères ou espaces maximum)</b>		
IMPLANT ORTHOPEDIQUE SOUS FORME D'UNE PLAQUE DESTINEE A ETRE FIXEE ENTRE DEUX PARTIES D'OS.		
<b>LE(S) DEMANDEUR(S) :</b>		
Bernard PRANDI, agissant en qualité de Directeur Général de la Société MEMOMETAL TECHNOLOGIES (S.A.S.),		
<b>DESIGNE(NT) EN TANT QU'INVENTEUR(S) :</b>		
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Adresse	Rue	57, rue René - Louis Gallouedec
	Code postal et ville	35700 RENNES
Société d'appartenance (facultatif)		
<b>2</b>	Nom	WAPNER
	Prénoms	Keith
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	Code postal et ville	19106 PHILADELPHIA PA - USA
Société d'appartenance (facultatif)		
<b>3</b>	Nom	
	Prénoms	
Adresse	Rue	
	Code postal et ville	
Société d'appartenance (facultatif)		
S'il y a plus de trois inventeurs, utilisez plusieurs formulaires. Indiquez en haut à droite le N° de la page suivi du nombre de pages.		
<b>DATE ET SIGNATURE(S)</b>		
<b>DU (DES) DEMANDEUR(S)</b>		
<b>OU DU MANDATAIRE</b>		
(Nom et qualité du signataire) Directeur Général or Inventeur		
B. PRANDI		
Pe 27.10.2008		

Conformément aux dispositions de la loi n° 78-17 du 6.01.1978 modifiée relative à l'informatique, aux fichiers et aux libertés, vous bénéficiez d'un droit d'accès et de rectification pour les données vous concernant auprès de l'INPI. Les données à caractère personnel que vous êtes tenu(e) de nous fournir dans ce formulaire sont exclusivement utilisées pour identifier le titulaire de la demande et son éventuel mandataire.

L'invention se rattache au secteur technique des implants orthopédiques.

5 Plus particulièrement, l'invention concerne une plaque pour arthrodèse ou ostéosynthèse destinée à être fixée entre deux parties d'os.

D'une manière parfaitement connue pour un homme du métier, ce type de plaque comprend, généralement, des trous pour l'engagement de vis permettant de réaliser une arthrodèse entre deux os ou une ostéosynthèse  
10 entre deux fragments osseux. C'est le cas, par exemple, pour les os de la main ou du pied, sans pour cela exclure d'autres applications, notamment dans le domaine du rachis. En fonction du cas pathologique à traiter, ces plaques peuvent être de forme générale rectiligne ou présenter d'autres formes géométriques.

15

A partir de cet état de la technique, l'un des problèmes que se propose de résoudre l'invention est d'améliorer, d'une manière sure et efficace, la compression entre les parties d'os assujetties à la plaque et selon une direction précise.

20

Pour résoudre le problème posé d'améliorer la compression entre les deux parties d'os considérées, selon l'invention, la plaque présente au moins un agencement apte à permettre de positionner au moins une vis d'une manière inclinée par rapport au plan défini par ladite plaque selon un  
25 angle compris entre 30° et 60° environ.

Selon une forme avantageuse de réalisation, l'agencement est constitué par une zone inclinée selon l'angle compris entre 30° et 60°, et

présentant un trou pour l'engagement de la vis. La zone inclinée résulte d'une découpe et d'une déformation d'une partie de la plaque.

5 Dans une autre forme de réalisation, l'agencement est constitué par un trou incliné selon l'angle compris entre 30° et 60° pour l'engagement de la vis.

10 Compte tenu du problème posé à résoudre, l'agencement est situé sur une partie déterminée de la longueur de la plaque pour que la vis assure la mise en compression des deux parties d'os.

L'invention est exposée ci-après plus en détail à l'aide des figures des dessins annexés dans lesquels :

- 15 - la figure 1 est une vue en perspective d'une forme de réalisation de la plaque ;
- la figure 2 est une vue de profil de la plaque ;
- les figures 3 et 4 sont des vues en perspective montrant le montage de la plaque entre deux parties d'os et la composition de ces dernières, au moyen de la plaque selon l'invention, les parties
- 20 d'os étant présentées d'une manière schématique.

Selon l'invention, la plaque (1) présente au moins un agencement (1a) apte à permettre de positionner au moins une vis (2), d'une manière inclinée, selon un angle  $\alpha$  compris entre 30° et 60° par rapport au plan défini par ladite plaque (figure 2)

25

Dans une forme de réalisation, l'agencement (1a) est constitué par une zone inclinée qui résulte d'une découpe et d'une déformation d'une partie de la plaque. Par exemple, la déformation est consécutive à une

opération de découpage – poinçonnage. Cette zone inclinée constitue une nervure qui présente un trou (1a1) pour l'engagement de la vis (2). La nervure inclinée (1a) est formée sur une partie déterminée de la longueur de la plaque pour qu'après engagement, la vis (2) assure la mise en  
5 compression des deux parties d'os, comme il sera indiqué dans la suite de la description.

Dans une autre forme de réalisation, pour permettre une orientation angulaire de la vis (2), selon un angle compris entre 30° et 60° environ,  
10 l'agencement (1a) peut être constitué par un trou incliné. A noter que la nervure (1a) permet une adaptation de l'angle en fonction du cas pathologique à traiter étant donné qu'il est possible de déformer à volonté cette nervure. Autrement dit, l'angle peut être réglé directement par le chirurgien sur quelques degrés en bloc opératoire avec un instrument  
15 adapté.

On renvoie aux figures 3 et 4 qui montrent le positionnement de la plaque (1) entre deux parties d'os (O1) et (O2) :

- Après réalisation des ostéotomies, un gabarit de la plaque, qui ne  
20 présente pas de nervures, permet de déterminer la position de cette nervure.
- Après avoir déterminé le positionnement de la nervure, le chirurgien réalise un logement correspondant, avec une râpe adaptée.
- Après positionnement de la plaque présentant la nervure, le chirurgien  
25 met en place une ou deux vis (3), d'un côté du foyer d'ostéosynthèse de l'arthrodèse considéré du côté de la nervure. On peut positionner, éventuellement, une broche de fixation temporaire dans un plot adapté.

- La vis (2) est ensuite engagée dans le trou (1a1) de la nervure (1a) pour mettre le foyer de fracture en compression.
- Une fois la compression effectuée, le chirurgien peut visser une ou plusieurs autres vis (3) de fixation complémentaire et retirer la broche temporaire de maintien

5 D'une manière connue, cette plaque (1) présente des trous lisses et/ou taraudés (1b) pour l'engagement des vis de fixation (3) vissées dans les parties d'os (O1) et (O2), comme il ressort des figures 3 et 4.

10 De même, la plaque (1) peut présenter au moins un logement (1c) pour l'introduction d'une broche en vue d'assurer une fixation temporaire de ladite plaque (1). Avantageusement, la plaque (1) peut présenter un logement (1c) pour l'introduction d'une broche du côté de l'une des parties  
15 de l'os (O1) et un autre logement (1d) pour l'introduction d'une autre broche du côté de l'autre partie d'os (O2).

Compte tenu de l'effet de compression recherchée, telle qu'indiquée précédemment, le logement (1c) est constitué par un trou circulaire dont le  
20 diamètre correspond sensiblement à celui de la broche (4), tandis que l'autre logement (1d) peut être constitué par une lumière oblongue.

Ces dispositions permettent donc à l'os de coulisser sous la plaque (1) au moment du vissage, tout en assurant une compression selon une direction précise, généralement suivant l'axe de la plaque. Les broches sont  
25 de tout type connu et approprié, et parfaitement connu pour un homme du métier.

La plaque (1) peut présenter différentes formes géométriques, de sorte que les trous (1a) notamment peuvent être alignés ou être disposés, en

totalité ou en partie, selon les sommets d'un triangle ou d'un quadrilatère. Ces dispositions, en triangle ou en quadrilatère des vis, améliorent la stabilité du montage.

5           A noter également que la plaque (1), quelle que soit sa forme géométrique, peut être cintrée longitudinalement, pour s'adapter à la courbure de l'os permettant, en conséquence, aux vis (2) de former un angle entre elles.

10           Les avantages ressortent bien de la description.

## REVENDICATIONS

- 5      -1- Implant orthopédique sous forme d'une plaque (1) destinée à être fixée entre deux parties d'os au moyen de vis engagées dans des trous (1b) formés dans l'épaisseur de ladite plaque, caractérisé en ce que la plaque (1) présente au moins un agencement (1a) apte à permettre de positionner au moins une vis (2) d'une manière inclinée par rapport au plan défini par ladite plaque selon un angle compris entre 30° et 60° environ.
- 10      -2- Implant selon la revendication 1, caractérisé en ce que l'agencement (1a) est constitué par une zone inclinée selon l'angle compris entre 30° et 60°, et présentant un trou (1a1) pour l'engagement de la vis (2).
- 15      -3- Implant selon la revendication 2, caractérisé en ce que la zone inclinée résulte d'une opération de découpe puis de déformation d'une partie de la plaque.
- 20      -4- Implant selon la revendication 1, caractérisé en ce que l'agencement est constitué par un trou incliné selon l'angle compris entre 30° et 60° pour l'engagement de la vis.
- 25      -5- Implant selon l'une quelconque des revendications 1 à 4, caractérisé en ce que l'agencement est situé sur une partie déterminée de la longueur de la plaque pour que la vis assure la mise en compression des deux parties d'os.
- 6- Implant selon l'une des revendications 1 à 5, caractérisé en ce que la plaque présente un logement pour l'introduction d'une broche du côté de l'une des parties d'os et un autre logement pour l'introduction d'une broche du côté de l'autre partie d'os.



5 -7- Implant selon la revendication6, caractérisé en ce que l'un des logements est constitué par un trou circulaire (1c) dont le diamètre correspond sensiblement à celui de la broche, tandis que l'autre logement est constitué par une lumière oblongue.

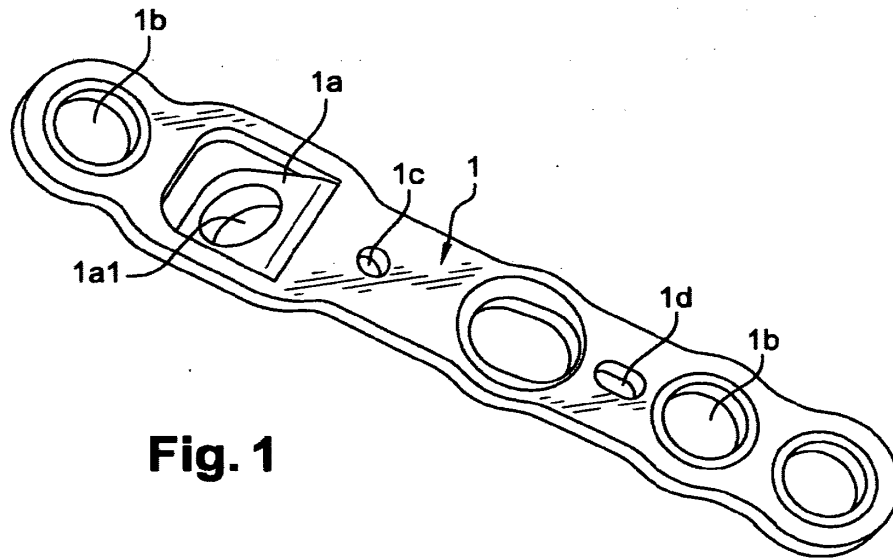
10 -8- Implant selon l'une des revendications 1 à7, caractérisé en ce que la plaque présente des trous lisses et/ou taraudés destinés à recevoir des vis de fixation avec les parties d'os.

-9- Implant selon la revendication8, caractérisé en ce que les différents trous sont alignés.

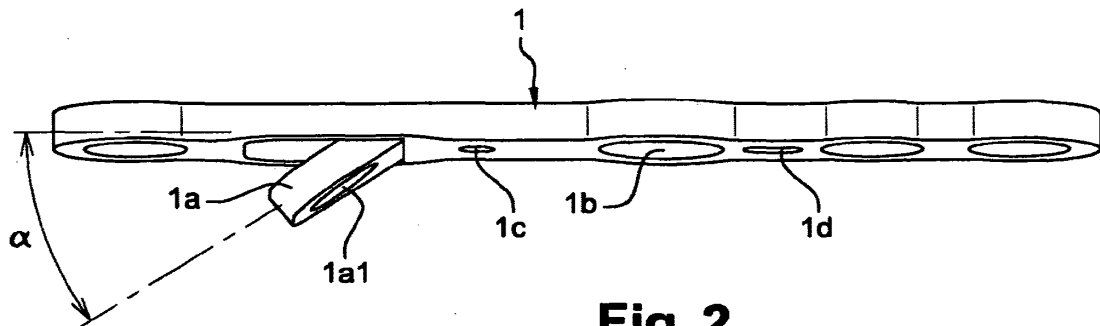
15 -10- Implant selon la revendication8, caractérisé en ce que certains des trous sont disposés selon le sommet d'un triangle ou d'un quadrilatère.



1/2

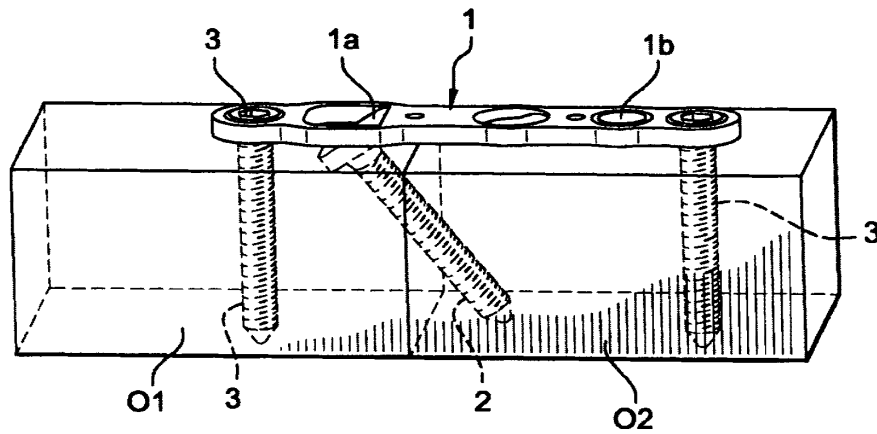


**Fig. 1**

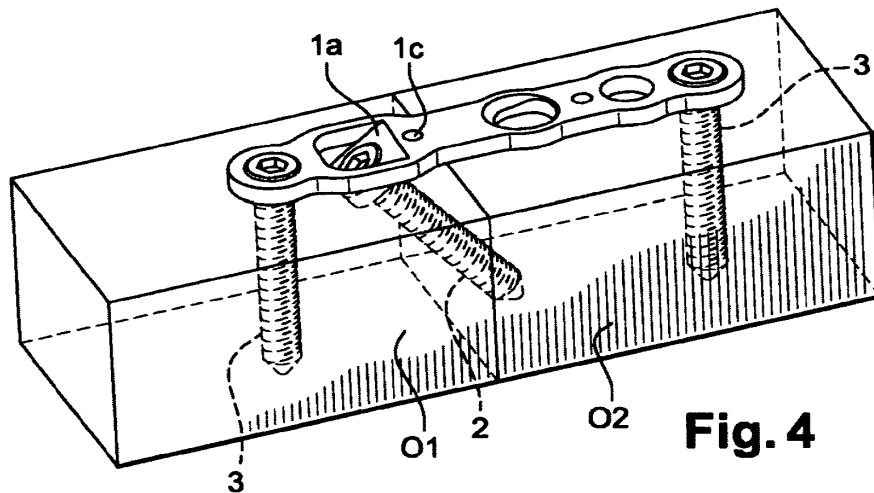


**Fig. 2**

2/2



**Fig. 3**



**Fig. 4**



**PATENT APPLICATION FEE DETERMINATION RECORD**

Effective October 02, 2008

Application or Docket Number

12,918,871

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
U.S. NATIONAL STAGE FEES		
BASIC FEE	SMALL ENT. = \$ 150	LARGE ENT. = \$ 300
EXAMINATION FEE	Satisfies PCT Article 33(1)-(4) = \$ 50 / \$ 100	All other situations = \$ 110 / \$ 220
SEARCH FEE	U.S. is ISA = \$ 50 / \$ 100 ALL other countries = \$ 200 / \$ 400	ALL other situations = \$ 270 / \$ 540
FEE FOR EXTRA SPEC. PGS.	minus 100 =	/ 50 =
TOTAL CHARGEABLE CLAIMS	7 minus 20 = *	
INDEPENDENT CLAIMS	1 minus 3 = *	
MULTIPLE DEPENDENT CLAIM PRESENT		

\* If the difference in column 1 is less than zero, enter "0" in column 2

**SMALL ENTITY**TYPE ☐

OR

**OTHER THAN****SMALL ENTITY**

RATE	FEE		RATE	FEE
BASIC FEE	\$165	OR	BASIC FEE	
EXAM. FEE	\$110		EXAM. FEE	
SEARCH FEE	\$215		SEARCH FEE	
X \$ 135 =			X \$ 270 =	
X \$ 26 =		OR	X \$ 52 =	
X \$ 110 =		OR	X \$ 220 =	
+ \$ 195 =		OR	+ \$ 390 =	
TOTAL		OR	TOTAL	

**CLAIMS AS AMENDED - PART II**

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	** =
Independent	*	Minus	*** =
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

**SMALL ENTITY**

OR

**OTHER THAN****SMALL ENTITY**

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X \$ 26 =		OR	X \$ 52 =	
X \$ 110 =		OR	X \$ 220 =	
+ \$ 195 =		OR	+ \$ 390 =	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	** =
Independent	*	Minus	*** =
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X \$ 26 =		OR	X \$ 52 =	
X \$ 110 =		OR	X \$ 220 =	
+ \$ 195 =		OR	+ \$ 390 =	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than "20", enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than "3", enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

MULTIPLE DEPENDENT CLAIM CALCULATION SHEET (FOR USE WITH FORM PTO-875)							SERIAL NO. <i>12 1918071</i>	FILING DATE					
CLAIMS													
	AS FILED		AFTER 1 <sup>st</sup> AMENDMENT		AFTER 2 <sup>nd</sup> AMENDMENT			AS FILED		AFTER 1 <sup>st</sup> AMENDMENT		AFTER 2 <sup>nd</sup> AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.		IND.	DEP.	IND.	DEP.	IND.	DEP.
1								51					
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49								99					
50								100					
TOTAL IND.													
TOTAL DEP.													
TOTAL CLAIMS													



## UNITED STATES PATENT AND TRADEMARK OFFICE

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 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1459  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
12/918,071	Bernard PRANDI	30064

535

KF ROSS PC

5683 RIVERDALE AVENUE

SUITE 203 BOX 900

BRONX, NY 10471-0900

INTERNATIONAL APPLICATION NO.

PCT/FR09/51879

I.A. FILING DATE

PRIORITY DATE

10/02/2009

**CONFIRMATION NO. 5973****371 FORMALITIES LETTER**

\*OC000000043459883\*

Date Mailed: 09/14/2010

**NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371  
 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)**

The following items have been submitted by the applicant or the IB to the United States Patent and Trademark Office as an Elected Office (37 CFR 1.495):

- Copy of the International Application filed on 08/18/2010
- Copy of the International Search Report filed on 08/18/2010
- Small Entity Statement filed on 08/18/2010
- U.S. Basic National Fees filed on 08/18/2010
- Priority Documents filed on 08/18/2010
- Specification filed on 08/18/2010
- Claims filed on 08/18/2010
- Abstracts filed on 08/18/2010
- Drawings filed on 08/18/2010

The applicant needs to satisfy supplemental fees problems indicated below.

The following items **MUST** be furnished within the period set forth below in order to complete the requirements for acceptance under 35 U.S.C. 371:

- Translation of the application into English. Note a processing fee will be required if submitted later than 30 months from the priority date.
- Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.492(h) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.

**SUMMARY OF FEES DUE:**

Total additional fees required for this application is **\$130** for a Large Entity:

- **\$130** Surcharge.

**ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.**

The time period set above may be extended by filing a petition and fee for extension of time under the provisions of 37 CFR 1.136(a).

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

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DEBORAH D WILLIAMS

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Telephone: (571) 272-0466





## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1459  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
12/918,071	Bernard PRANDI	30064
535		
KF ROSS PC		
5683 RIVERDALE AVENUE		
SUITE 203 BOX 900		
BRONX, NY 10471-0900		
INTERNATIONAL APPLICATION NO.		
PCT/FR09/51879		
I.A. FILING DATE	PRIORITY DATE	
10/02/2009		

**CONFIRMATION NO. 5973**  
**371 FORMALITIES LETTER**



\*OC000000043459883\*

Date Mailed: 09/15/2010

**NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371  
 IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)**

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- Claims filed on 08/18/2010
- Abstracts filed on 08/18/2010
- Drawings filed on 08/18/2010

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- Oath or declaration of the inventors, in compliance with 37 CFR 1.497(a) and (b), identifying the application by the International application number and international filing date.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.492(h) of \$130 for a non-small entity, must be submitted with the missing items identified in this letter.

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- \$130 Surcharge.

**ALL OF THE ITEMS SET FORTH ABOVE MUST BE SUBMITTED WITHIN TWO (2) MONTHS FROM THE DATE OF THIS NOTICE OR BY 32 MONTHS FROM THE PRIORITY DATE FOR THE APPLICATION, WHICHEVER IS LATER. FAILURE TO PROPERLY RESPOND WILL RESULT IN ABANDONMENT.**

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Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

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DEBORAH D WILLIAMS

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Telephone: (571) 272-0466

30064

IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor	Bernard PRANDI et al			
Patent App.	12/918,071			
Filed	18 August 2010	Conf. No. 5973		
For	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED ...			
Art Unit	Not known			
Hon. Commissioner of Patents				
Box 1450				
Alexandria, VA 22313-1450				

FIRST AMENDMENT

Please amend the above-identified application as follows:

Atty's 30064

Pat. App. 12/918,071

SPECIFICATION AMENDMENTS

Page 1, immediately below the title insert the following:

CROSS REFERENCE TO RELATED APPLICATIONS

This application is the US national phase of PCT application PCT/FR2009/051879, filed 2 October 2009, published 8 April 2010 as 2010/037985, and claiming the priority of French patent application 0856694 itself filed 2 October 2008, whose entire disclosures are herewith incorporated by reference.

Atty's 30064

Pat. App. 12/918,071

CLAIM AMENDMENTS

1           1. (currently amended) An orthopedic implant in the  
2 form of a plate ~~[(1)]~~ adapted to be fixed between two bone parts  
3 by screws engaged in throughgoing holes ~~[(1b)]~~, ~~characterized in~~  
4 ~~that~~ wherein the plate ~~[(1)]~~ has a formation that is set at an  
5 angle between 30° and 60° with respect to a plane defined by the  
6 plate and having a hole ~~[(1a1)]~~ for receiving a screw ~~[(2)]~~,  
7 the formation being located in a transversely central portion along  
8 the length of the plate such that the screw ~~[(2)]~~ compresses  
9 together the two bones parts.

1           2. (currently amended) The implant according to claim  
2 1, ~~characterized in that~~ wherein the plate has a hole for the  
3 insertion of a pin on the side of one of the bone parts and a hole  
4 for the insertion of a guide pin on the side of the other bone  
5 part.

1           3. (currently amended) The implant according to claim  
2 2, ~~characterized in that~~ wherein one of the holes is a circular  
3 hole ~~[(1c)]~~ whose diameter corresponds substantially to that of  
4 the pin, whereas the other hole is an elongated slot.

1           4. (currently amended) The implant according to one of  
2 claims 1 to 3, ~~characterized in that~~ wherein the plate has smooth

Atty's 30064

Pat. App. 12/918,071

3 and/or threaded holes adapted to receive screws for fastening with  
4 the bone parts.

1 5. (currently amended) The implant according to claim  
2 4, ~~characterized in that~~ wherein the holes are aligned.

1 6. (currently amended) The implant according to claim  
2 4, ~~characterized in that~~ wherein some of the holes are arrayed at  
3 corners of a triangle or of a quadrilateral.

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Pat. App. 12/918,071

1           7. (new) An orthopedic implant for joining two bone  
2 parts that are longitudinally juxtaposed, the implant comprising:  
3           a plate extending along a plate plane, formed with a  
4 plurality of anchor holes extending transversely of the plate plane  
5 through the plate, and adapted to lie against the bone parts with  
6 the plate plane extending longitudinally of the bone parts and  
7 bridging the bone parts and with at least one of the anchor holes  
8 to each side of the fusion plane;  
9           anchor screws engaged generally perpendicular of the  
10 plate plane through the anchor holes in the plate plane for  
11 securing the plate to both of the bone parts;  
12           a formation on the plate forming a guide extending along  
13 an axis that, when the plate is lying against the two bone parts,  
14 extends from one of the bone parts into the other of the bone  
15 parts; and  
16           a compression screw fittable through the formation and  
17 extending along the axis, whereby the compression screw can  
18 longitudinally compress the two bone parts together.

1           8. (new) The orthopedic implant defined in claim 7  
2 wherein the two bone parts meet at a fusion plane generally  
3 perpendicular to the plate plane when the plate is lying against  
4 the bone parts, the axis extending through the fusion plane.

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1                   9. (new) The orthopedic implant defined in claim 7  
2 wherein the formation is a tab unitarily formed with the bone plate  
3 and lying on a tab plane extending at an acute angle to the plate  
4 plane.

1                   10. (new) The orthopedic implant defined in claim 9  
2 wherein the angle is between about 30° and 60°.

1                   11. (new) The orthopedic implant defined in claim 9  
2 wherein at least one of the holes in the plate is formed as an  
3 elongated slot.

1                   12. (new) The orthopedic implant defined in claim 11  
2 wherein the slot is juxtaposed with the other bone part when the  
3 plate is lying against the bone parts, whereby the plate can slide  
4 limitedly relative to the other bone part when the compression  
5 screw is tightened.



Atty's 30064

Pat. App. 12/918,071

Remarks:

This amendment is submitted in an earnest effort to advance this case to issue without delay.

The English text submitted herewith is an accurate translation of the non-English text originally filed.

The required PCT cross-reference paragraph has been added, and the translated claims have been amended to eliminate multiple dependencies, reference numerals, and some nonstandard terminology. In addition a set of US-style claims has been added.

KF Ross PC

*/Andrew Wilford/*

by: Andrew Wilford, 26,597  
Attorney for Applicant

09 October 2010  
5683 Riverdale Avenue Box 900  
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Doc Code: I D S

PTO/SB/08a

Doc description: Information Disclosure Statement (I D S) filed.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application number		12/918,071		
				Filing date		18 August 2010		
				First Named Inventor		Bernard PRANDI et al		
				Art Unit				
				Examiner name				
				Attorney Docket Number		30064		
<b>U.S. PATENTS</b>								
Ex. Initials	Cite No.	Patent Number	Kind Code	Issue Date	Name of Patentee or Applicant	Pages, columns, lines where Relevant Passages or relevant Figs. appear		
	1	7179260	B	02-2007	Gerlach			
	2							
	3							
	4							
	5							
	6							
<b>U.S. PATENT APPLICATION PUBLICATIONS</b>								
Ex. Initials	Cite No.	Publication Number	Kind Code	Publication date	Name of Patentee or Applicant	Pages, columns, lines where Relevant Passages or relevant Figs. appear		
	1	20080114360	A	05-2008	DaFrota Carrera			
	2	20040172028	A	09-2004	Roger			
	3							
<b>FOREIGN PATENT DOCUMENTS</b>								
Ex. Initials	Cite No.	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant	Pages, columns, lines where Relevant Passages or relevant Figs. appear	Tra ?
	1	8227727	DE	U	01-1983	----		N
	2	3630862	DE	A	03-1988	Anapliotis		N
	3	590290	FR	B	03-1925	Lauwens		N
	4							
	5							
<b>NON-PATENT LITERATURE</b>								
Ex. Initials	Cite No.	AUTHOR NAME, Article Title, Book Title, Date, Page(s), Vol/Iss. No., Publisher, City/Country						
	1							
	2							
<b>EXAMINER SIGNATURE</b>								
Examiner Signature					Date Considered			

29 October 2010

aw

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Customer Number 535  
5683 Riverdale Ave. Box 900  
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30064PTOSB81.WPD

### Electronic Acknowledgement Receipt

<b>EFS ID:</b>	8729043
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard PRANDI
<b>Customer Number:</b>	00535
<b>Filer:</b>	Andrew Wilford
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	30064
<b>Receipt Date:</b>	29-OCT-2010
<b>Filing Date:</b>	
<b>Time Stamp:</b>	10:32:15
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

### Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		30064TR1.pdf	54051	yes	6
			69e8c0ba2da5706d739517dd3bec8a44e48eaa69		

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	4	
	Claims		5	6	
Warnings:					
Information:					
2	Oath or Declaration filed	30064DecSigned.pdf	1145937	no	2
			9fa872b053e19e11454e1e86643d437ed269ba22		
Warnings:					
Information:					
3		30064AM1.pdf	59170	yes	7
			e2e7ffadde5b7713c2347aa139bf37e99a929b30		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Specification		2	2	
	Claims		3	6	
	Applicant Arguments/Remarks Made in an Amendment		7	7	
Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Filed (SB/08)	30064PTOSB81.pdf	26654	no	1
			d3358d007f0dd5e792cc5a3325b293f88e305901		
Warnings:					
Information:					
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5	Foreign Reference	DE3630862.pdf	658610	no	8
			625fe1433e0afc1ca1904e61eca30fc3b1b61168		
Warnings:					
Information:					
6	Foreign Reference	DE8227727.pdf	353752	no	12
			616d585505adf75fd1b185e9d6189175768ef053		
Warnings:					

<b>Information:</b>					
7	Foreign Reference	FR590290.pdf	136060	no	3
			02f3d2916ccda5aac6a53063538a27396d96cf58		
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			2434234		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

30064 SN 12/918,071

Transl. of 2010/037985

ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE ADAPTED TO BE FIXED  
BETWEEN TWO BONE PARTS

The invention relates to the technical field of  
orthopedic implants.

5 More particularly, the invention relates to a plate for  
arthrodesis or osteosynthesis adapted to be fixed between two bone  
parts.

10 In a manner known to one having ordinary skill in the  
art, this type of plate generally has holes for engaging screws,  
allowing arthrodesis between two bones or osteosynthesis between  
two bone fragments. This is, for example, the case for bones of  
the hand or foot, without however excluding other applications,  
particularly in the field of the spine. Depending on the pathology  
to be treated, these plates can have a general rectilinear or other  
15 geometric shapes.

From this state of the art, one of the objects the  
invention proposes to attain is to improve, in a sure and efficient  
manner, compression in a precise direction between the bone parts  
subjected to the plate.

20 To attain the given object to enhance the compression  
between the two relative bone parts, according to the invention,  
the plate has a formation that orients at least one screw at an  
angle with respect to a plane defined by the plate, the angle being  
between about 30° and 60°.

25 According to an advantageous embodiment, the formation is  
a tab that is angled according to an angle between 30° and 60°, and

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having a hole for engaging the screw. The angled tab results from a cut out and a deformation of a portion of the plate.

In another embodiment, the formation is a hole angled at an angle between  $30^\circ$  and  $60^\circ$  for engaging the screw.

5           Considering the problem to be solved, the formation is located on a determined portion of the length of the plate so that the screw ensures the compression of the two bone parts.

The invention is described hereinafter in more detail, with reference to the attached drawing in which:

10           FIG. 1 is a perspective view of an embodiment of the plate;

FIG. 2 is a side view of the plate;

15           FIGS. 3 and 4 are perspective views showing the mounting of the plate between two bone parts and their orientation by means of the plate according to the invention, the bone parts being shown schematically.

20           According to the invention, the plate 1 has at least one formation 1a adapted to enable the positioning of at least one screw 2, at an angle  $\alpha$  of between  $30^\circ$  and  $60^\circ$  with respect to a plane of the plate (FIG. 2).

25           In one embodiment, the formation 1a is an angled tab cut out and deformed from the plate. For example, the deformation is made with a cutting-punching operation. This angled tab has a hole 1a1 for a screw 2. The angled tab 1a is positioned along the length of the plate so that after the screw 2 is fitted to it, the screw ensures the compression together of the two bone parts, as indicated below in the description.

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In another embodiment, to allow for an angular orientation of the screw 2 according to an angle between about 30° and 60°, the formation 1a can be formed as an angled hole. It must be noted that the tab 1a enables adaptation of the angle as a function of the pathology to be treated, given that it is possible to deform this tab at will. In other words, the angle can be adjusted over a few degrees by the surgeon in the operating room, using an appropriate tool.

With reference to FIGS. 3 and 4 that show the positioning of the plate 1 between two bone parts O1 and O2:

Once the osteotomies have been carried out, a template of the plate, which does not have a guide formation, enables the position of this tab to be determined.

After determining the position of the tab, the surgeon makes a corresponding recess with the appropriate rasp.

Once the plate having the tab has been positioned, the surgeon sets one or two screws 3, on a side of the site of the osteosynthesis of the arthrodesis toward the tab. A temporary fastening pin can, possibly, be positioned in an complementary lug.

The screw 2 is then engaged in the hole 1a1 of the tab 1a to place the fracture in compression.

Once the compression has been done, the surgeon can screw one or several other additional fastening screws 3 and remove the temporary pin.



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In a known manner, this plate 1 has smooth and/or threaded holes for the fastening screws 3 set in the bone parts O1 and O2 to engage in, as shown in FIGS. 3 and 4.

Similarly, the plate 1 can have at least one hole 1c for a pin for temporarily positioning the plate 1. Advantageously, the plate 1 can have a guide 1c for the insertion of a pin on the side of one of the bone parts O1 and another guide 1d for the insertion of another pin on the side of the other bone part O2.

Considering the effect of the desired compression, such as indicated above, the guide 1c is a circular hole whose diameter corresponds substantially to that of the pin 4, whereas the other guide 1d can be an elongated slot.

These provisions thus enable the bone to slide under the plate 1 as the screws are set, while ensuring compression along a precise direction, generally axially or parallel to the plate. The pins are of any known and appropriate type, and perfectly known to one having ordinary skill in the art.

The plate 1 can have several shapes, so that the holes 1a in particular can be aligned or arrayed, all or in part, according to the corners of a triangle or of a quadrilateral. These provisions, in triangle or in quadrilateral, of the screws, improve the stability of its mounting.

It must be noted also that the plate 1, no matter its shape, can be longitudinally bent so as to adapt to the curvature of the bone, consequently enabling the screws 2 to form an angle between them.

The advantages are readily apparent from the description.

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# CLAIMS

1. An orthopedic implant in the form of a plate (1) adapted to be fixed between two bone parts by screws engaged in throughgoing holes (1b), characterized in that the plate (1) has a formation that is set at an angle between 30° and 60° with respect to a plane defined by the plate and having a hole (1a1) for receiving a screw (2), the formation being located in a transversely central portion along the length of the plate such that the screw (2) compresses together the two bones parts.

2. The implant according to claim 1, characterized in that the plate has a hole for the insertion of a pin on the side of one of the bone parts and a hole for the insertion of a guide pin on the side of the other bone part.

3. The implant according to claim 2, characterized in that one of the holes is a circular hole (1c) whose diameter corresponds substantially to that of the pin, whereas the other hole is an elongated slot.

4. The implant according to one of claims 1 to 3, characterized in that the plate has smooth and/or threaded holes adapted to receive screws for fastening with the bone parts.

5. The implant according to claim 4, characterized in that the holes are aligned.

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6. The implant according to claim 4, characterized in that some of the holes are arrayed at corners of a triangle or of a quadrilateral.

30064

PCT/FR2009/051879

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: My residence, post-office address, and citizenship are as stated below next to my name,  
I believe that I am an original joint and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled

ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

the specification of which was filed on 18 August 2010 as application 12/918,071.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 USC 119 of any foreign applications for patent or inventor's certificate listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Applications

Country	Number	Filing Date	Priority claimed
FR	0856694	2 October 2008	Yes

I hereby claim the benefit under 35 USC 120 of the United States Application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States Application(s) in the manner provided by the first paragraph of 35 USC 112, I acknowledge the duty to disclose material information as defined in 37 CFR 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Serial Number	Filing Date	Status
PCT/FR2009/051879	2 October 2009	Pending

I hereby appoint as attorneys to prosecute this application and to transact all business connected therewith:

Andrew Wilford, Reg. 26,597; Jonathan Myers, Reg. 26,963; and each of them individually.

Address all correspondence to:

KF Ross PC  
Customer Number 535  
5683 Riverdale Avenue, Box 900  
Bronx, NY 10471-0900  
(718) 864-6500

Direct all telephone calls to:

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor:

*Bernard PRANDI*

Inventor's signature



Date:

Residence: Rennes, France

Citizen of France

Post-office Address: 57 rue René-Louis Gallouedec, F-35700 Rennes, France

Full name of second inventor:

*Keith WAPNER*

Inventor's signature

Date:

Residence: Philadelphia, PA

Citizen of USA

Post-office Address: 230 W. Washington SQ FL5, Philadelphia, PA 19103

30064

PCT/FR2009/051879

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: My residence, post-office address, and citizenship are as stated below next to my name,  
I believe that I am an original joint and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled

ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

the specification of which was filed on 16 August 2010 as application 12/918,071.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 USC 119 of any foreign applications for patent or inventor's certificate listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Applications

Country	Number	Filing Date	Priority claimed
FR	0856694	2 October 2008	Yes

I hereby claim the benefit under 35 USC 120 of the United States Application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States Application(s) in the manner provided by the first paragraph of 35 USC 112, I acknowledge the duty to disclose material information as defined in 37 CFR 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Serial Number	Filing Date	Status
PCT/FR2009/051879	2 October 2009	Pending

I hereby appoint as attorneys to prosecute this application and to transact all business connected therewith:

Andrew Wilford, Reg. 26,597; Jonathan Myers, Reg. 26,963; and each of them individually.

Address all correspondence to:

KF Ross PC  
Customer Number 535  
5683 Riverdale Avenue, Box 900  
Bronx, NY 10471-0900

Direct all telephone calls to:

(718) 884-6600

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: *Bernard PRANDI*

Inventor's signature \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: Rennes, France Citizen of France  
Post-office Address: 57 rue René-Louis Gallouedec, F-35700 Rennes, France

Full name of second inventor: *Keith WAPNER*

Inventor's signature *[Signature]* Date: *9/29/10*  
Residence: Philadelphia, PA Citizen of USA  
Post-office Address: 230 W. Washington SQ FL5, Philadelphia, PA 19103

30064

IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor	Bernard PRANDI et al	
Patent App.	12/918,071	
Filed	18 August 2010	Conf. No. 5973
For	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS	
Art Unit	Not known	

Hon. Commissioner of Patents  
Box 1450  
Alexandria, VA 22313-1450

SECOND AMENDMENT

Please amend the above-identified application as follows:

CLAIM AMENDMENTS

1           1. (previously presented) An orthopedic implant in the  
2 form of a plate adapted to be fixed between two bone parts by  
3 screws engaged in throughgoing holes, wherein the plate has a  
4 formation that is set at an angle between 30° and 60° with respect  
5 to a plane defined by the plate and having a hole for receiving a  
6 screw, the formation being located in a transversely central  
7 portion along the length of the plate such that the screw com-  
8 presses together the two bones parts.

1           2. (previously presented) The implant according to claim  
2 1, wherein the plate has a hole for the insertion of a pin on the  
3 side of one of the bone parts and a hole for the insertion of a  
4 guide pin on the side of the other bone part.

1           3. (previously presented) The implant according to claim  
2 2, wherein one of the holes is a circular hole whose diameter  
3 corresponds substantially to that of the pin, whereas the other  
4 hole is an elongated slot.

1           4. (currently amended) The implant according to ~~one of~~  
2 ~~claims 1 to 3~~ claim 1, wherein the plate has smooth and/or threaded  
3 holes adapted to receive screws for fastening with the bone parts.

1           5. (previously presented) The implant according to claim  
2 4, wherein the holes are aligned.

1           6. (previously presented) The implant according to claim  
2     4, wherein some of the holes are arrayed at corners of a triangle  
3     or of a quadrilateral.

1           7. (previously presented) An orthopedic implant for  
2     joining two bone parts that are longitudinally juxtaposed, the  
3     implant comprising:

4           a plate extending along a plate plane, formed with a  
5     plurality of anchor holes extending transversely of the plate plane  
6     through the plate, and adapted to lie against the bone parts with  
7     the plate plane extending longitudinally of the bone parts and  
8     bridging the bone parts and with at least one of the anchor holes  
9     to each side of the fusion plane;

10          anchor screws engaged generally perpendicular of the  
11     plate plane through the anchor holes in the plate plane for secur-  
12     ing the plate to both of the bone parts;

13          a formation on the plate forming a guide extending along  
14     an axis that, when the plate is lying against the two bone parts,  
15     extends from one of the bone parts into the other of the bone  
16     parts; and

17          a compression screw fittable through the formation and  
18     extending along the axis, whereby the compression screw can longi-  
19     tudinally compress the two bone parts together.

1           8. (previously presented) The orthopedic implant defined  
2     in claim 7 wherein the two bone parts meet at a fusion plane  
3     generally perpendicular to the plate plane when the plate is lying  
4     against the bone parts, the axis extending through the fusion  
5     plane.



1           9. (previously presented) The orthopedic implant defined  
2 in claim 7 wherein the formation is a tab unitarily formed with the  
3 bone plate and lying on a tab plane extending at an acute angle to  
4 the plate plane.

1           10. (previously presented) The orthopedic implant  
2 defined in claim 9 wherein the angle is between about 30° and 60°.

1           11. (previously presented) The orthopedic implant  
2 defined in claim 9 wherein at least one of the holes in the plate  
3 is formed as an elongated slot.

1           12. (previously presented) The orthopedic implant  
2 defined in claim 11 wherein the slot is juxtaposed with the other  
3 bone part when the plate is lying against the bone parts, whereby  
4 the plate can slide limitedly relative to the other bone part when  
5 the compression screw is tightened.

Atty's 30064

Pat. App. 12/918,071

Remarks:

This amendment is submitted in an earnest effort to advance this case to issue without delay.

The translated claims have been amended to eliminate multiple dependencies.

KF Ross PC

*/Andrew Wilford/*

by: Andrew Wilford, 26,597  
Attorney for Applicant

04 November 2010  
5683 Riverdale Avenue Box 900  
Bronx, NY 10471-0900  
Cust. No.: 535  
Tel: 718 884-6600  
Fax: 718 601-1099  
Email: [email@kfrpc.com](mailto:email@kfrpc.com)

30064

IN THE U.S. PATENT AND TRADEMARK OFFICE

Inventor	Bernard PRANDI et al	
Patent App.	12/918,071	
Filed	18 August 2010	Conf. No. 5973
For	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS	
Art Unit	Not known	

Hon. Commissioner of Patents  
Box 1450  
Alexandria, VA 22313-1450

COMMUNICATION REGARDING LATE FEE

This is in reply to the Notification of Missing  
Requirements mailed 15 September 2010.

The surcharge of \$130 is not applicable in this case.  
The priority document claimed in this case has a date of  
2 October 2008. The due date for this application equivalent to  
thirty months later is 2 April 2011. We filed the translation and  
the Declaration on 29 October 2010 which is before the 30 month due  
date of 2 April 2011.

Atty's 30064

Pat. App. 12/918,071

All filing requirements have been met and we hope that  
this case can now move to examination.

KF Ross PC

*/Andrew Wilford/*

By: Andrew Wilford, 26,597  
Attorney for Applicant

04 November 2010  
5683 Riverdale Avenue Box 900  
Bronx, NY 10471-0900  
Cust. No.: 535  
Tel: 718 884-6600  
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Email: [email@kfrpc.com](mailto:email@kfrpc.com)

### Electronic Acknowledgement Receipt

<b>EFS ID:</b>	8766392
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard PRANDI
<b>Customer Number:</b>	00535
<b>Filer:</b>	Andrew Wilford/Elsie Reyes
<b>Filer Authorized By:</b>	Andrew Wilford
<b>Attorney Docket Number:</b>	30064
<b>Receipt Date:</b>	04-NOV-2010
<b>Filing Date:</b>	
<b>Time Stamp:</b>	09:54:56
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		30064AM2.pdf	56231 0a83d337d1bb18dbbc2d882a316f428263c006dd	yes	5

Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Preliminary Amendment			1	1	
Claims			2	4	
Applicant Arguments/Remarks Made in an Amendment			5	5	
<b>Warnings:</b>					
<b>Information:</b>					
2	Applicant Response to Pre-Exam Formalities Notice	30064C01.pdf	45155	no	2
			775d7f68951eb71c395ac968edc35b1ca19626d2		
<b>Warnings:</b>					
<b>Information:</b>					
Total Files Size (in bytes):			101386		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

PTO/SB/06 (07-06)

Approved for use through 1/31/2007. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>12/918,071</b>		Filing Date <b>10/29/2010</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)		SMALL ENTITY <input checked="" type="checkbox"/> OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	7 minus 20 =	* 0	X \$26 =	0	OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	* 0	X \$110 =	0	OR	X \$ =				
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.										
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
<b>AMENDMENT</b>	<b>10/29/2010</b>	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	
<b>AMENDMENT</b>	<b>11/04/2010</b>	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 12	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.										
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".										
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:  
/GLENN BURNS JR/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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 www.uspto.gov

U.S. APPLICATION NUMBER NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
12/918,071	Bernard Prandi	30064

535  
 KF ROSS PC  
 5683 RIVERDALE AVENUE  
 SUITE 203 BOX 900  
 BRONX, NY 10471-0900

INTERNATIONAL APPLICATION NO.	
PCT/FR09/51879	
I.A. FILING DATE	PRIORITY DATE
10/02/2009	10/02/2008

**CONFIRMATION NO. 5973**  
**371 ACCEPTANCE LETTER**



OC000000044450062

Date Mailed: 11/15/2010

### NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office in its capacity as a Designated / Elected Office (37 CFR 1.495), has determined that the above identified international application has met the requirements of 35 U.S.C. 371, and is ACCEPTED for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above and the relevant dates are:

10/29/2010  
 DATE OF RECEIPT OF 35 U.S.C. 371(c)(1),  
 (c)(2) and (c)(4) REQUIREMENTS

10/29/2010  
 DATE OF COMPLETION OF ALL  
 35 U.S.C. 371 REQUIREMENTS

A Filing Receipt (PTO-103X) will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE " FILING DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1), (c)(2) and (c)(4) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN ABOVE.** The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363). Once the Filing Receipt has been received, send all correspondence to the Group Art Unit designated thereon.

The following items have been received:

- Indication of Small Entity Status
- Copy of the International Application filed on 08/18/2010
- English Translation of the IA filed on 10/29/2010
- Copy of the International Search Report filed on 08/18/2010
- Copy of IPE Report filed on 10/29/2010
- Preliminary Amendments filed on 10/29/2010
- Information Disclosure Statements filed on 10/29/2010
- Oath or Declaration filed on 10/29/2010
- Small Entity Statement filed on 08/18/2010
- Request for Immediate Examination filed on 10/29/2010
- U.S. Basic National Fees filed on 08/18/2010
- Priority Documents filed on 08/18/2010
- Power of Attorney filed on 10/29/2010
- Specification filed on 08/18/2010
- Claims filed on 08/18/2010
- Abstracts filed on 08/18/2010

page 1 of 2



- Drawings filed on 08/18/2010

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

DEBORAH D WILLIAMS

---

Telephone: (571) 272-0466



## UNITED STATES PATENT AND TRADEMARK OFFICE

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 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/918,071	10/29/2010		545	30064	7	1

CONFIRMATION NO. 5973

535

KF ROSS PC  
 5683 RIVERDALE AVENUE  
 SUITE 203 BOX 900  
 BRONX, NY 10471-0900

## FILING RECEIPT



\*OC000000044450061\*

Date Mailed: 11/15/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

## Applicant(s)

Bernard Prandi, Rennes, FRANCE;  
 Keith Wapner, Philadelphia, PA;

**Power of Attorney:** The patent practitioners associated with Customer Number 535

## Domestic Priority data as claimed by applicant

This application is a 371 of PCT/FR09/51879 10/02/2009

## Foreign Applications

FRANCE 0856694 10/02/2008

**If Required, Foreign Filing License Granted:** 11/10/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/918,071**

**Projected Publication Date:** 02/24/2011

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

**Preliminary Class**

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

**LICENSE FOR FOREIGN FILING UNDER**

**Title 35, United States Code, Section 184**

**Title 37, Code of Federal Regulations, 5.11 & 5.15**

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Effective October 02, 2008					Application or Docket Number <span style="font-size: 1.2em;">12,918,571</span>	
<b>CLAIMS AS FILED - PART I</b>						
(Column 1)		(Column 2)		SMALL ENTITY TYPE <input type="checkbox"/> OR OTHER THAN SMALL ENTITY		
U.S. NATIONAL STAGE FEES				RATE	FEE	
BASIC FEE	SMALL ENT. = \$ 150	LARGE ENT. = \$ 300		BASIC FEE	<b>\$165</b>	OR
EXAMINATION FEE	Satisfies PCT Article 33(1)-(4) = \$ 50 / \$ 100	All other situations = \$ 110 / \$ 220		EXAM. FEE	<b>\$110</b>	OR
SEARCH FEE	U.S. is ISA = \$ 50 / \$ 100 ALL other countries = \$ 200 / \$ 400	ALL other situations = \$ 270 / \$ 540		SEARCH FEE	<b>\$215</b>	OR
FEE FOR EXTRA SPEC. PGS.	minus 100 = / 50 =			X \$ 135 =		OR
TOTAL CHARGEABLE CLAIMS	<span style="font-size: 1.5em;">7</span> minus 20 = *			X \$ 26 =		OR
INDEPENDENT CLAIMS	<span style="font-size: 1.5em;">1</span> minus 3 = *			X \$ 110 =		OR
MULTIPLE DEPENDENT CLAIM PRESENT				+	\$ 195 =	OR
				TOTAL		OR
* If the difference in column 1 is less than zero, enter "0" in column 2						
<b>CLAIMS AS AMENDED - PART II</b>						
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
	Total	*	Minus	**	=	
	Independent	*	Minus	***	=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					
(Column 1)		(Column 2)		(Column 3)		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	
	Total	*	Minus	**	=	
	Independent	*	Minus	***	=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>					
(Column 1)		(Column 2)		(Column 3)		
				RATE	ADDITIONAL FEE	
				X \$ 26 =		OR
				X \$ 110 =		OR
				+	\$ 195 =	OR
				TOTAL ADDIT. FEE		OR
						OR
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "20", enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than "3", enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.						

MULTIPLE DEPENDENT CLAIM CALCULATION SHEET (FOR USE WITH FORM PTO-875)							SERIAL NO. 12 / 918071		FILING DATE				
CLAIMS													
	AS FILED		AFTER 1 <sup>st</sup> AMENDMENT		AFTER 2 <sup>nd</sup> AMENDMENT			AS FILED		AFTER 1 <sup>st</sup> AMENDMENT		AFTER 2 <sup>nd</sup> AMENDMENT	
	IND.	DEP.	IND.	DEP.	IND.	DEP.		IND.	DEP.	IND.	DEP.	IND.	DEP.
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43							93						
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45							95						
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47							97						
48							98						
49							99						
50							100						
TOTAL IND.	1												
TOTAL DEP.	6												
TOTAL CLAIMS	7												



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/918,071	10/29/2010	Bernard Prandi	30064

CONFIRMATION NO. 5973

## PUBLICATION NOTICE

535  
 KF ROSS PC  
 5683 RIVERDALE AVENUE  
 SUITE 203 BOX 900  
 BRONX, NY 10471-0900



\*OC000000046170236\*

**Title:** ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

**Publication No.** US-2011-0046681-A1

**Publication Date:** 02/24/2011

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov). The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at [www.uspto.gov](http://www.uspto.gov) using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PTO/SB/50 (11-08)

Approved for use through 11/30/2011. OMB 0651-0035  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number: **00530**

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☒ The address associated with Customer Number: **00530**

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

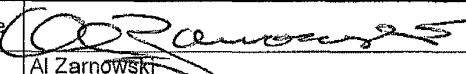
Assignee Name and Address:

MEMOMETAL TECHNOLOGIES, a corporation of France  
Campus Ker Lann  
Rue Blaise Pascal  
Bruz FRANCE F-35170

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	10/12/11
Name	Al Zarnowski	Telephone	201-831-5570
Title	Vice President, Intellectual Property of HOWMEDICA OSTEONICS CORP. of which MEMOMETAL TECHNOLOGIES is a wholly owned subsidiary		



PTO/SB/96 (12-05)  
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 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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### **STATEMENT UNDER 37 CFR 3.73(b)**

Applicant/Patent Owner: Bernard Prandi and Keith Wapner

Application No./Patent  
 No./Control No.: 12/918,071 Filed/Issue Date: October 29, 2010

Entitled: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

Memometal Technologies, a corporation  
 (Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.  
 (The extent (by percentage) of its ownership interest is \_\_\_\_\_ %)

in the patent application/patent identified above by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_, Frame \_\_, or a true copy of the original assignment is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Bernard Prandi, Keith Wapner To: Memometal Technologies  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel 025216, Frame 0624, or for which a copy thereof is attached.
2. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
3. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

**As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.**

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

<u>/Ryan L.Bergeron/</u>	<u>October 27, 2011</u>
Signature	Date
<u>Ryan L.Bergeron</u>	<u>(908) 654-5000</u>
Printed or Typed Name	Telephone Number
<u>Attorney for Applicant</u>	
Title	

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: October 27, 2011

Electronic Signature for Ryan L. Bergeron: /Ryan L. Bergeron/

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	11278052
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	535
<b>Filer:</b>	Arnold H. Krumholz/Sophia Buchan
<b>Filer Authorized By:</b>	Arnold H. Krumholz
<b>Attorney Docket Number:</b>	30064
<b>Receipt Date:</b>	27-OCT-2011
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	12:25:37
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	no
------------------------	----

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	power_1.pdf	111811 24a2de75e033483a9854f754beea9d2b5543c709	no	1

**Warnings:****Information:**

2	Assignee showing of ownership per 37 CFR 3.73(b).	TRAUMA4968_- _Statement_Under_37_CFR_37 3b_PTO_SB-96_- _for_PARENT_2.pdf	21548  908111766a429ae72e61731280ffd6d3c0e d881c	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>				133359	
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
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P.O. Box 1450  
Alexandria, Virginia 22313-1450  
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/918,071	10/29/2010	Bernard Prandi	30064

535  
KF ROSS PC  
311 East York Street  
Savannah, GA 31401

**CONFIRMATION NO. 5973**  
**POWER OF ATTORNEY NOTICE**



\*OC000000050719355\*

Date Mailed: 11/02/2011

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/27/2011.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/gbien-aime/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/918,071	10/29/2010	Bernard Prandi	30064

**CONFIRMATION NO. 5973**

**POA ACCEPTANCE LETTER**

530  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK  
600 SOUTH AVENUE WEST  
WESTFIELD, NJ 07090



Date Mailed: 11/02/2011

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/27/2011.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/gbien-aime/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PTO/SB/80 (11-08)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☒ Practitioners associated with the Customer Number: 00530

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

☒ The address associated with Customer Number: 00530

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

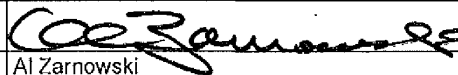
Assignee Name and Address:

MEMOMETAL TECHNOLOGIES, a corporation of France  
 Campus Ker Lann  
 Rue Blaise Pascal  
 Bruz FRANCE F-35170

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	11/30/11
Name	Al Zarnowski	Telephone	201-831-5570
Title	Vice President, Intellectual Property MEMOMETAL TECHNOLOGIES		

PTO/SB/96 (12-05)  
 Approved for use through 07/31/2006. OMB 0651-0031  
 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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### **STATEMENT UNDER 37 CFR 3.73(b)**

Applicant/Patent Owner: Bernard Prandi and Keith Wapner

Application No./Patent  
 No./Control No.: 12/918,071 Filed/Issue Date: October 29, 2010

Entitled: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

Memometal Technologies, a corporation  
 (Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.  
 (The extent (by percentage) of its ownership interest is \_\_\_\_\_ %)

in the patent application/patent identified above by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_, Frame \_\_, or a true copy of the original assignment is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Bernard Prandi, Keith Wapner To: Memometal Technologies  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel 025216, Frame 0624, or for which a copy thereof is attached.
2. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
 Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
3. From: \_\_\_\_\_ To: \_\_\_\_\_  
 The document was recorded in the United States Patent and Trademark Office at  
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- ☐ Additional documents in the chain of title are listed on a supplemental sheet.

**As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.**

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

<u>/Ryan L.Bergeron/</u>	<u>January 6, 2012</u>
Signature	Date
<u>Ryan L.Bergeron</u>	<u>(908) 654-5000</u>
Printed or Typed Name	Telephone Number
<u>Attorney for Applicant</u>	
Title	

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: January 6, 2012

Electronic Signature for Ryan L. Bergeron: /Ryan L. Bergeron/

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: January 6, 2012  
Electronic Signature for Ryan L. Bergeron: /Ryan L. Bergeron/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Confirmation No.: 5973

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM OF  
A PLATE TO BE FIXED BETWEEN TWO  
BONE PARTS

Examiner: Not Yet  
Assigned

**NOTIFICATION OF LOSS OF ENTITLEMENT TO SMALL ENTITY STATUS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Madam:

Assignee, MEMOMETAL TECHNOLOGIES, hereby notifies the Patent and Trademark Office that it is not entitled to status as a small entity, and that the claim for small entity status filed by the Applicant is hereby withdrawn.

Dated: January 6, 2012

Respectfully submitted,  
Electronic signature:  
/Ryan L. Bergeron/  
Ryan L. Bergeron  
Registration No.: 66,377  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000  
Attorney for Applicant



Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	11774940
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Arnold H. Krumholz/Sophia Buchan
<b>Filer Authorized By:</b>	Arnold H. Krumholz
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	06-JAN-2012
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	12:21:11
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	no
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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	TRAUMA4968_-_POA_1.pdf	60798 fe99c7ed866dd982fa0ae40cb93a8c7737246a48	no	1

**Warnings:****Information:**

2	Assignee showing of ownership per 37 CFR 3.73(b).	TRAUMA4968_-_Statement_Under_37_CFR_373b_PTO_SB-96_-_for_PARENT_2.pdf	24680 e17f75529045be238791fc08e5a3ee2ddffc bf9d	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Miscellaneous Incoming Letter	TRAUMA4968_-_Notification_of_Loss_of_Small_Entity_Status_3.pdf	17400 f22f36f4aa2ee21e0d1e8132a429366a9c6c cfa6	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			102878		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647

**CONFIRMATION NO. 5973**

**POA ACCEPTANCE LETTER**

530  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK  
600 SOUTH AVENUE WEST  
WESTFIELD, NJ 07090



Date Mailed: 01/12/2012

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 01/06/2012.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/fstephanos/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	TRAUMA 3.3-647	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5347894		1994-09-20	Fischer	
	2	5105690		1992-04-21	Lazzara et al.	
	3	4503737		1985-03-12	DiGiovanni	
	4	3552389	A	1971-01-05	Allgower et al.	
	5	4513744	A	1985-04-30	Klaue	
	6	4957496	A	1990-09-18	Schmidt	
	7	4388921	A	1983-06-21	Sutter et al.	
If you wish to add additional U.S. Patent citation information please click the Add button.						Add
U.S.PATENT APPLICATION PUBLICATIONS						Remove

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	Not Yet Assigned		
	Attorney Docket Number	TRAUMA 3.3-647		

Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050070904	A1	2005-03-31	Gerlach et al.	
	2	20100274293		2010-10-28	Terrill et al.	
	3	20040214137	A1	2004-10-28	Walton	

If you wish to add additional U.S. Published Application citation information please click the Add button. **Add**

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1	2002098306	WO	A1	2002-12-12	Australian Surgical Design And et al.		<input type="checkbox"/>
	2	1897509	EP	A1	2008-03-12	Surge Foot	English language translation of Abstract only.	<input checked="" type="checkbox"/>
	3	2007131287	WO	A1	2007-11-22	Slater, Gordon		<input type="checkbox"/>
	4	3027148	DE	A1	1981-12-03	Straumann Inst Ag	English equivalent is US 4,388,921	<input checked="" type="checkbox"/>
	5	590290	FR	A	1925-06-13	Collin & Cie	English translation of the claims only.	<input checked="" type="checkbox"/>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	Not Yet Assigned		
	Attorney Docket Number	TRAUMA 3.3-647		

	6	95016403	WO	A1	1995-06-22	Heggeness Michael H et al.		<input type="checkbox"/>
	7	2846870	FR	A1	2004-05-14	Fixano	English language translation of Abstract only	<input checked="" type="checkbox"/>

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#### NON-PATENT LITERATURE DOCUMENTS

**Remove**

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
	1	Manual of Small Animal Fracture Repair And Management, Jan. 1, 1998, pp. 80-81	<input type="checkbox"/>
	2	Catalogue General 1987-1988, plaques d'osteosynthese, bone plates, Division of Pfizer Hospital Products Group, Bagneux, France	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

#### EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	TRAUMA 3.3-647

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-04-24
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: April 24, 2012  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Group Art Unit: 3775

Filed: October 29, 2010

Examiner: Not Yet Assigned

For: ORTHOPEDIC IMPLANT IN THE FORM OF A  
PLATE TO BE FIXED BETWEEN TWO BONE  
PARTS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Madam:

It is respectfully requested that the references listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. A copy of each reference which is not a U.S. patent or patent application is enclosed. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited references are legally available prior art or that the same are pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: April 24, 2012

Respectfully submitted,

Electronic signature:

/Brent L. Farese/

Brent L. Farese

Registration No.: 63,617

LERNER, DAVID, LITTENBERG, KRUMHOLZ &  
MENTLIK, LLP

600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000

Attorney for Applicant(s)

LD-458\

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	12615689
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Arnold H. Krumholz/Sophia Buchan
<b>Filer Authorized By:</b>	Arnold H. Krumholz
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	24-APR-2012
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	14:12:17
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	TRAUMA4968_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	612580 9457a703bb5e7390b1da3883501394c296d45c26	no	5

### Warnings:

### Information:

2	Transmittal Letter	TRAUMA4968_-_IDS_-_Information_Disclosure_State ment_-_Reference_Enclosed_LD-458_2.pdf	19173  0f1127a3b4b1d625c705a68db8050689ef025782	no	1
Warnings:					
Information:					
3	Foreign Reference	TRAUMA4943_-_WO_2002098306_3.pdf	4934093  72527479a3c32bdf6a612f06ba9331fd01f18598	no	30
Warnings:					
Information:					
4	Foreign Reference	TRAUMA4943_-_EP_1897509_4.pdf	2857421  4858ff0a1faa20b184624b5870fb6197a53ec4d9	no	15
Warnings:					
Information:					
5	Foreign Reference	TRAUMA4979_-_WO_2007131287_5.pdf	6433349  553391b5a08106afa3cbea6accc2105214293e0e	no	36
Warnings:					
Information:					
6	Foreign Reference	TRAUMA4943_-_DE_3027148_6.pdf	5132731  6a28498af07ff7e6fc0216faf54c99a1048aa978	no	25
Warnings:					
Information:					
7	Foreign Reference	TRAUMA4943_-_FR_590290_7.pdf	139767  aef0b790b198b1c54e07ca31cacebb2595f352b7	no	3
Warnings:					
Information:					
8	Foreign Reference	TRAUMA4943_-_WO_1995016403_8.pdf	10236216  2b5d552634081fc93b221c4ba38c8de0102612a9	no	46
Warnings:					
Information:					
9	Foreign Reference	TRAUMA5008_-_FR_2846870A1_9.pdf	2408399  9ccc37b8c71955f47d0a3116abb7e044da80542f	no	13
Warnings:					
Information:					
10	Foreign Reference	TRAUMA5008_-_FR_2846870_Transl_of_Abstr act_only_10.pdf	119502  a6cddc9a6d961cf39cf17dab25cce56d8ed90e8c	no	1
Warnings:					
Information:					

11	Non Patent Literature	TRAUMA4953_- _Manual_of_Small_Animal_Fra _cture_1998_pp_80-81_11.pdf	401148 8333aa4b65b15a74a76e88e62921e17b412 c305b	no	2
<b>Warnings:</b>					
<b>Information:</b>					
12	Non Patent Literature	TRAUMA4968_- _TRAUMA4968_Catalogue_198 7-88_12.pdf	1350542 0f1a878b32894c4b86af281ab0cc0c10974c c2a8	no	3
<b>Warnings:</b>					
<b>Information:</b>					
13	Foreign Reference	TRAUMA4968_- _TRAUMA4968_fr590290_Clai ms-_13.pdf	15147 11a92f72b22401f22dae1373592ff651cbb4 e1c8	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			34660068		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

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Approved for use through 07/31/2012. OMB 0651-0031

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	C. J. Beccia	
	Attorney Docket Number	TRAUMA 3.3-647	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	2486303		1949-10-25	Longfellow	
	2	3528085		1970-09-08	Reynolds	
	3	3534731		1970-10-20	Muller	
	4	3779240		1973-12-18	Kondo	
	5	4388921		1983-06-21	Sutter et al.	
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	Attorney Docket Number	TRAUMA 3.3-647

	9	4988350		1991-01-29	Herzberg	
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	Attorney Docket Number	TRAUMA 3.3-647

	20	5931839		1999-08-03	Medoff	
	21	6146382		2000-11-14	Hurlbert	
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	23	6348052		2002-02-19	Sammarco	
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	Attorney Docket Number	TRAUMA 3.3-647

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Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20010011172		2001-08-02	Orbay et al.	
	2	20010047172		2001-11-29	Foley et al.	
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	Attorney Docket Number		TRAUMA 3.3-647	

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	Attorney Docket Number	TRAUMA 3.3-647

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
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	Attorney Docket Number	TRAUMA 3.3-647

	37	20080015593		2008-01-17	Pfefferle et al.	
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
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	Attorney Docket Number		TRAUMA 3.3-647	

	48	20090210010		2009-08-20	Strnad et al.	
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	Attorney Docket Number	TRAUMA 3.3-647

	59	20100125300		2010-05-20	Blitz et al.	
	60	20100160973		2010-06-24	Leung	
	61	20100217328		2010-08-26	Terrill et al.	
	62	20100256638		2010-10-07	Tyber et al.	
	63	20100256639		2010-10-07	Tyber et al.	
	64	20100305618		2010-12-02	Kay et al.	
	65	20100324556		2010-12-23	Tyber et al.	
	66	20110004253		2011-01-06	Fraser et al.	
	67	20110009866		2011-01-13	Johnson et al.	
	68	20110087229		2011-04-14	Kubiak et al.	
	69	20110087295		2011-04-14	Kubiak et al.	



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

	70	20110092981		2011-04-21	Ng et al.	
	71	20110093017		2011-04-21	Prasad et al.	
	72	20110093018		2011-04-21	Prasad et al.	
	73	20110118739		2011-05-19	Tyber et al.	
	74	20110125153		2011-05-26	Tyber et al.	
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	77	20110230884		2011-09-22	Mantzaris et al.	
	78	20110264148		2011-10-27	Prandi et al.	
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	80	20110306977		2011-12-15	Michel et al.	

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

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	1	0 705 572	EP	A2	1996-04-10	Synthes Ag		<input type="checkbox"/>
	2	1707227	EP	A2	2006-10-04	Depuy Products Inc		<input type="checkbox"/>
	3	2362616	FR	A1	1978-03-24	Duyck Jean	English translation of Abstract only.	<input checked="" type="checkbox"/>
	4	2764183	FR	A1	1998-12-11	Afriat Jacques	English translation of Abstract only.	<input checked="" type="checkbox"/>
	5	2912895	FR	A1	2008-08-29	Small Bone Innovations Interna	English translation of Abstract only.	<input checked="" type="checkbox"/>
	6	9528887	WO	A1	1995-11-02	Mortier Jean Pierre		<input type="checkbox"/>
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<p><sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.</p>			

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-06-21
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Dated: June 21, 2012  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Group Art Unit: 3775

Filed: October 29, 2010

Examiner: C. J. Beccia

For: ORTHOPEDIC IMPLANT IN THE FORM OF A  
PLATE TO BE FIXED BETWEEN TWO BONE  
PARTS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Madam:

It is respectfully requested that the references listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. A copy of each reference which is not a U.S. patent or patent application is enclosed. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited references are legally available prior art or that the same are pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: June 21, 2012

Respectfully submitted,

Electronic signature:  
/Brent L. Farese/  
Brent L. Farese  
Registration No.: 63,617  
LERNER, DAVID, LITTENBERG, KRUMHOLZ &  
MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000  
Attorney for Applicant(s)

LD-458\

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	13068352
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	David J. Kohn/Jillian Curry
<b>Filer Authorized By:</b>	David J. Kohn
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	21-JUN-2012
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	10:18:44
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	TRAUMA4968_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	615861 bfc68a2247c7b13388643f61a668b1e5e8240656	no	17

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2	Transmittal Letter	TRAUMA4968_-_IDS_-_Information_Disclosure_State ment_-_Reference_Enclosed_LD-458_2.pdf	19287 4a803f65c8b95522341a7e4d2efb2b96af67022	no	1
<b>Warnings:</b>					
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3	Foreign Reference	TRAUMA4562_-_EP0705572_3.pdf	362352 b099cde85ceaf2386682886f207322c4efa1a267	no	8
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<b>Information:</b>					
4	Foreign Reference	TRAUMA4968_-_EP1707227_4.pdf	434564 0c672996d875e1c6592511777b066133c2cbcd9	no	7
<b>Warnings:</b>					
<b>Information:</b>					
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<b>Warnings:</b>					
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6	Foreign Reference	TRAUMA4973_-_FR2362616_Abs_6.pdf	39441 ce5ee6d78c480e1b9ebbb129b21874bbae41006d	no	1
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<b>Information:</b>					
7	Foreign Reference	TRAUMA4968_-_FR2764183_7.pdf	600045 5f353809f42185b0e4ce4de4f19375fe28dd3f12	no	16
<b>Warnings:</b>					
<b>Information:</b>					
8	Foreign Reference	TRAUMA4968_-_FR2912895_8.pdf	568538 8b6fec1cbccc25c24032bd70ea9d71496afb083	no	14
<b>Warnings:</b>					
<b>Information:</b>					
9	Foreign Reference	TRAUMA4968_-_WO9528887_9.pdf	1126059 7b81dd050ed019145d9c2672479d3d19916fc262	no	31
<b>Warnings:</b>					
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: June 28, 2012  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:	:
Prandi et al.	:
	:
Application No. 12/918,071	: Group Art Unit: N/A
	:
Filed: October 29, 2010	: Examiner: Not Yet
	: Assigned
	:
For: ORTHOPEDIC IMPLANT IN THE FORM OF :	:
A PLATE TO BE FIXED BETWEEN TWO :	:
BONE PARTS	:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**PRELIMINARY AMENDMENT**

Dear Madam:

Prior to initiation of the prosecution of the above-identified pending U.S. patent application, the following amendments and remarks are respectfully submitted.

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

**IN THE CLAIMS**

1. (currently amended) An orthopedic implant ~~in the form of comprising~~ a plate adapted to be fixed between two bone parts by first and second screws engaged in throughgoing corresponding first and second holes in the plate, ~~wherein the plate has having a formation that is set at an angle between 30° and 60° with respect to a longitudinal axis of the plate, the formation a plane defined by the plate and having including a third hole for receiving a third screw, the formation and being located in a transversely central portion along the length of the plate, such that the third screw, once inserted in the third hole, compresses together the two bones parts.~~

2. (previously presented) The implant according to claim 1, wherein the plate has a hole for the insertion of a pin on the side of one of the bone parts and a hole for the insertion of a guide pin on the side of the other bone part.

3. (previously presented) The implant according to claim 2, wherein one of the holes is a circular hole whose diameter corresponds substantially to that of the pin, whereas the other hole is an elongated slot.

4. (currently amended) The implant according to claim 1, wherein ~~the plate has at least one of the first, second, and third holes is non-threaded and at least one of the first, second, and third holes is threaded smooth and/or threaded holes adapted to receive screws for fastening with the bone parts.~~

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

5. (currently amended) The implant according to claim ~~4~~1, wherein ~~the holes are aligned~~ the third hole is adapted to direct the third screw through the third hole and across the bone parts, the third hole being the only hole of the implant that is so adapted.

Claims 6-8 (canceled).

9. (currently amended) The ~~orthopedic—~~implant ~~defined in~~ according to claim 7~~1~~, wherein the formation is a tab unitarily formed with the bone plate and ~~lying on a tab plane extending at an acute angle with respect to the plate plane,~~ the angle being formed at the intersection of an axis extending through the third hole and the longitudinal axis of the plate.

10. (currently amended) The ~~orthopedic—~~implant ~~defined in~~ according to claim 9~~1~~, wherein the angle is between about 30° and 60°.

11. (currently amended) The ~~orthopedic—~~implant ~~defined in~~ according to claim 9~~1~~, wherein at least ~~one of the holes~~ the third hole in the plate is ~~formed as an elongated slot~~ recessed below a top surface of the plate.

12. (currently amended) The ~~orthopedic—~~implant ~~defined in~~ according to claim 11~~9~~, wherein ~~the slot is juxtaposed with the~~

Application No.: 12/918,071

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~~other bone part when the plate is lying against the bone parts,~~  
~~whereby the plate can slide limitedly relative to the other bone~~  
~~part when the compression screw is tightened~~ the tab is situated  
between adjacent portions of a bottom surface of the plate, such  
that the tab is adapted to extend into at least one of the bone  
parts.

13. (new) An orthopedic implant comprising:

a plate having top and bottom surfaces and being configured to span first and second bones of a joint, such that the bottom surface of the plate is adapted to lie on adjacent sides of the joint;

a first hole formed through the top and bottom surfaces of the plate and having an axis that is angled with respect to a longitudinal axis of the plate, the first hole being formed in a tab extending outward from the bottom surface of the plate, such that the first hole is configured to direct a first fixation mechanism through the hole and across the joint to compress the first and second bones together; and

a second and third hole formed through the top and bottom surfaces of the plate, the second and third holes being configured to receive corresponding second and third fixation mechanisms and direct such fixation mechanisms into either of the first or second bones,

wherein the tab is situated between adjacent portions of the bottom surface of the plate, such adjacent portions being adapted to engage the first bone of the joint.

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

14. (new) The orthopedic implant according to claim 13, wherein the first hole forms a guide bore having side walls for directing a shaft of the first fixation mechanism through the guide bore and across the joint.

15. (new) The orthopedic implant according to claim 13, wherein the first hole is recessed below the top surface of the plate, the first hole being situated between side surfaces of the plate that extend generally along the longitudinal axis of the plate.

16. (new) The orthopedic implant according to claim 15, wherein the tab is configured to seat within a recess formed in the first bone.

17. (new) The orthopedic implant according to claim 13, wherein the tab extends at an acute angle with respect to the plate, the angle being formed at the intersection of the axis of the first hole and the longitudinal axis of the plate.

18. (new) An orthopedic implant comprising:

a plate having top and bottom surfaces and being configured to span first and second bones of a joint, such that the bottom surface of the plate is adapted to lie on adjacent sides of the joint;

a first hole formed through the top and bottom surfaces of the plate and having an axis that is angled with respect to a longitudinal axis of the plate, such that the first hole is

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Docket No.: TRAUMA 3.3-647

configured to direct a first fixation mechanism through the hole and across the joint to compress the first and second bones together;

a second and third hole formed through the top and bottom surfaces of the plate, the second and third holes being configured to receive corresponding second and third fixation mechanisms and direct such fixation mechanisms into either of the first or second bones; and

at least one compression hole formed through the plate for compressing the first and second bones together, the compression hole including an elongate slot having a ramped portion for seating a fourth fixation mechanism therein.

19. (new) The orthopedic implant according to claim 18, wherein the at least one compression hole is arranged adjacent to the first hole.

20. (new) The orthopedic implant according to claim 19, wherein at least one of the second and third holes is arranged adjacent the compression hole.

21. (new) The orthopedic implant according to claim 20, wherein the compression hole is situated between the first angled hole and the at least one of the second and third holes.

22. (new) The orthopedic implant according to claim 21, wherein the second hole is adapted to be arranged over top the first bone,

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

and the third hole is adapted to be arranged over top the second bone.

23. (new) The orthopedic implant according to claim 18, wherein the first hole forms a guide bore having side walls for directing a shaft of the first fixation mechanism through the guide bore and across the joint.

24. (new) The orthopedic implant according to claim 23, wherein the first hole is recessed below the top surface of the plate.

25. (new) The orthopedic implant according to claim 24, wherein the axis of the first hole and the longitudinal axis of the plate intersect to form an acute angle.



Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

**REMARKS**

The above-noted addition of new claims 13-25, the amendments to previously presented claims 1, 4-5, and 9-12, and the cancelation of claims 6-8 is respectfully submitted prior to initiation of the prosecution of this application in the U.S. Patent and Trademark Office. These new, amended, and canceled claims are respectfully submitted in order to more clearly and appropriately claim at least one aspect of the subject matter which Applicant(s) consider(s) to constitute the inventive contribution. No new matter is included in these amendments.

In view of the above, it is respectfully requested that these amendments now be entered, and that prosecution on the merits of this application now be initiated. If, however, for any reason the Examiner does not believe such action can be taken, it is respectfully requested that the Examiner telephone Applicants' attorney at (908) 654-5000 in order to overcome any objections which the Examiner may have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: June 28, 2012

Respectfully submitted,  
Electronic signature:  
/Brent L. Farese/  
Brent L. Farese  
Registration No.: 63,617  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000  
Attorney for Applicants

1778393  
LD-553

<b>AMENDMENT TRANSMITTAL LETTER</b>				Docket No. TRAUMA 3.3-647	
Application No. 12/918,071-Conf. #5973		Filing Date October 29, 2010		Examiner C. J. Beccia	
				Art Unit 3775	
Applicant(s): Bernard Prandi and Keith Wapner					
Invention: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS					
<b>TO THE COMMISSIONER FOR PATENTS</b>					
Transmitted herewith is an amendment in the above-identified application.					
The fee has been calculated and is transmitted as shown below.					
<b>CLAIMS AS AMENDED</b>					
	Claims Remaining After Amendment	Highest Number Previously Paid	Number Extra Claims Present	Rate	
<b>Total Claims</b>	22	- 20 =	2	x 60.00	120.00
<b>Independent Claims</b>	3	- 3 =	0	x 250.00	0.00
<b>Multiple Dependent Claims (check if applicable)</b> <input type="checkbox"/>					
<b>Other fee (please specify):</b>					
<b>TOTAL ADDITIONAL FEE FOR THIS AMENDMENT:</b>					120.00
<input checked="" type="checkbox"/> Large Entity <span style="margin-left: 200px;"><input type="checkbox"/> Small Entity</span> <input type="checkbox"/> No additional fee is required for this amendment. <input checked="" type="checkbox"/> Please charge Deposit Account No. <u>12-1095</u> in the amount of \$ <u>120.00</u> . <input type="checkbox"/> A check in the amount of \$ _____ to cover the filing fee is enclosed. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <input checked="" type="checkbox"/> The Director is hereby authorized to charge and credit Deposit Account No. <u>12-1095</u> as described below. A duplicate copy of this sheet is enclosed. <div style="margin-left: 40px;"> <input checked="" type="checkbox"/> Credit any overpayment.  <input checked="" type="checkbox"/> Charge any additional filing or application processing fees required under 37 CFR 1.16 and 1.17. </div>					
/Brent L. Farese/ Brent L. Farese Attorney/Agent Reg. No.: 63,617  LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP 600 South Avenue West Westfield, New Jersey 07090 (908) 654-5000				Dated: <u>June 28, 2012</u>	
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). Dated: June 28, 2012 <span style="float: right;">Electronic Signature for Brent L. Farese: /Brent L. Farese/</span>					

Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>	12918071			
<b>Filing Date:</b>	29-Oct-2010			
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS			
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi			
<b>Filer:</b>	David J. Kohn/Jillian Curry			
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647			
Filed as Large Entity				
<b>U.S. National Stage under 35 USC 371 Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
Claims in excess of 20	1615	2	60	120
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				120

<b>Electronic Acknowledgement Receipt</b>	
<b>EFS ID:</b>	13128900
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	David J. Kohn/Jillian Curry
<b>Filer Authorized By:</b>	David J. Kohn
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	28-JUN-2012
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	12:49:24
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$120
RAM confirmation Number	13637
Deposit Account	121095
Authorized User	
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)</p> <p>Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)</p>	

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1	Preliminary Amendment	Preliminary_amendment_1.pdf	32087 c7031b030d7f1420b34c19ee9997aa5f134135b	no	8
<b>Warnings:</b>					
<b>Information:</b>					
2	Miscellaneous Incoming Letter	Transmittal_Preliminary_Amen dment_2.pdf	21787 500587caf3a6d4b4d9c5e973946f037c9e37b929	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Fee Worksheet (SB06)	fee-info.pdf	30627 de20ee8168fcaa51e057c160eb9b11c89c822855	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			84501		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

PTO/SB/06 (07-06)

Approved for use through 1/31/2007. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>12/918,071</b>		Filing Date <b>10/29/2010</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)		SMALL ENTITY <input checked="" type="checkbox"/> OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
<b>AMENDMENT</b>	<b>06/28/2012</b>	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 22	Minus	** 20	= 2	X \$30 =	60	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X \$125 =	0	OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	60	OR	TOTAL ADD'L FEE	
<b>AMENDMENT</b>	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =	OR	X \$ =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =	OR	X \$ =		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE		TOTAL ADD'L FEE		
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:  
/MARY PEOPLES/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20080161860		2008-07-03	Ahrens et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
<b>EXAMINER SIGNATURE</b>			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> <sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.         </small>			

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-12-07
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: December 7, 2012  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Confirmation No.: 5973

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM OF A  
PLATE TO BE FIXED BETWEEN TWO BONE  
PARTS

Examiner: C. J. Beccia

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Madam:

It is respectfully requested that the reference listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited reference is legally available prior art or that the same is pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: December 7, 2012

Respectfully submitted,

Electronic signature:

/Brent L. Farese/

Brent L. Farese

Registration No.: 63,617

LERNER, DAVID, LITTENBERG, KRUMHOLZ &  
MENTLIK, LLP

600 South Avenue West

Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant(s)

LD-458\

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	14412373
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Nonna G. Akopyan/Joannah Laluces
<b>Filer Authorized By:</b>	Nonna G. Akopyan
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	07-DEC-2012
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	14:33:04
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	no
------------------------	----

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	TRAUMA4968_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	612186 86e32c42e79df28695f45a6dc4374246670812fe	no	4

**Warnings:****Information:**

2	Transmittal Letter	TRAUMA4968_-_IDS_-_Information_Disclosure_State ment_-_Reference_Enclosed_LD-458_2.pdf	22896 ef1c92a66ae2f312a31e9ecd32525de352584e7a	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			635082		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	6576018		2003-06-10	Holt			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> <sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.         </small>			



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-12-20
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: December 20, 2012  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

\_\_\_\_\_  
In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Confirmation No.: 5973

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM OF A  
PLATE TO BE FIXED BETWEEN TWO BONE  
PARTS  
\_\_\_\_\_

Examiner: C. J. Beccia

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Madam:

It is respectfully requested that the reference listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited reference is legally available prior art or that the same is pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: December 20, 2012

Respectfully submitted,

Electronic signature:

/Brent L. Farese/

Brent L. Farese

Registration No.: 63,617

LERNER, DAVID, LITTENBERG, KRUMHOLZ &  
MENTLIK, LLP

600 South Avenue West

Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant(s)

LD--458\

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	14524316
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Nonna G. Akopyan/Joannah Laluces
<b>Filer Authorized By:</b>	Nonna G. Akopyan
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	20-DEC-2012
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	11:56:37
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

### Payment information:

Submitted with Payment	no
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### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	TRAUMA4968_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	612181 b3a7ca032e856cf6e6af96a08c382500795e a9a9	no	4

### Warnings:

### Information:

2	Transmittal Letter	TRAUMA4968_-_IDS_-_Information_Disclosure_State ment_-_Reference_Enclosed_LD-458_2.pdf	22904 76b81cf1a46e35b3a481223436f5eb53f3f0647	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			635085		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

530	7590	02/21/2013
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090		

EXAMINER	
BECCIA, CHRISTOPHER J	

ART UNIT	PAPER NUMBER
3775	

NOTIFICATION DATE	DELIVERY MODE
02/21/2013	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eOfficeAction@ldlkm.com

Part of Paper No./Mail Date 20130213

Application/Control Number: 12/918,071  
Art Unit: 3775

Page 2

## **DETAILED ACTION**

### ***Election/Restrictions***

1. As provided in 37 CFR 1.475(a), a national stage application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept (“requirement of unity of invention”). Where a group of inventions is claimed in a national stage application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression “special technical features” shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim. See 37 CFR 1.475(e).

2. As provided in 37 CFR 1.475(b), a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:

(1) A product and a process specially adapted for the manufacture of said product; or

(2) A product and process of use of said product; or

(3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or



Application/Control Number: 12/918,071  
Art Unit: 3775

Page 3

(4) A process and an apparatus or means specifically designed for carrying out the said process; or

(5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

Otherwise, unity of invention might not be present. See 37 CFR 1.475(c).

3. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Species A, including Claims 1-5, 11, and 18-25 drawn to an intervertebral implant including an angled bore defined by a plate body.

Species B, including Claims 9-11, and 13-17, drawn to an intervertebral implant including an angled tab including a bore, the angle of the bore being defined by the angle of the tab with respect to the plate body.

The groups of inventions listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Olson et al. (US Patent No. 5,484,439) discloses an intervertebral implant (10) including an angled bore (34) found within the plate body, and an angled bore (24) formed by a tab (22).

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one

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Art Unit: 3775

Page 4

or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

A telephone call was made to Brent Farese on February 11, 2013 to request an oral election to the above restriction requirement, but did not result in an election being made.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Beccia whose telephone number is (571)270-7391. The examiner can normally be reached on Mon-Fri from 9:00am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Kevin Truong, at (571) 272-4705***. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 12/918,071  
Art Unit: 3775

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER BECCIA/  
Examiner, Art Unit 3775

<b><i>Index of Claims</i></b>  	<b>Application/Control No.</b>  12918071	<b>Applicant(s)/Patent Under Reexamination</b>  PRANDI ET AL.
	<b>Examiner</b>  CHRISTOPHER BECCIA	<b>Art Unit</b>  3775

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant											<input type="checkbox"/> CPA											<input type="checkbox"/> T.D.											<input type="checkbox"/> R.1.47										
CLAIM			DATE																																								
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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: March 20, 2013

Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

---

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Confirmation No.: 5973

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM  
OF A PLATE TO BE FIXED BETWEEN  
TWO BONE PARTS

---

Examiner: C. J. Beccia

**RESPONSE TO RESTRICTION REQUIREMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Madam:

This communication is in response to the Office Action mailed February 21, 2013, setting forth a Restriction Requirement in the above-identified application.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: March 20, 2013

Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Madam:

This communication is in response to the Office Action mailed February 21, 2013, setting forth a Restriction Requirement in the above-identified application.

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

**IN THE CLAIMS**

Claims 1-25 (canceled).

26. (new) A bone plate for spanning a joint between first and second bones, the bone plate comprising:

a top surface, a bottom bone-contacting surface, and a plurality of holes formed between the top and bottom surfaces, a first of the plurality of holes being arrangeable on a first side of the joint, and a second of the plurality of holes being arrangeable on a second side of the joint, the first and second holes adapted to receive first and second fixation members, respectively; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member and being arranged below an opening in the plate sized to receive such fixation member, a top face of the angled member including a stop surface for engaging with a head of the third fixation member,

wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that the central axis extends into the first bone, across the joint, and into the second bone.

27. (new) The plate of claim 26, wherein each of the first and second holes are locking holes adapted to engage with the first and second fixation members, respectively.

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28. (new) The plate of claim 26, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

29. (new) The plate of claim 27, wherein a central axis of the first hole extends into the first but not the second bone, and a central axis of the second hole extends into the second but not the first bone.

30. (new) The plate of claim 29, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

31. (new) The plate of claim 30, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

32. (new) The plate of claim 26, wherein the central axis of the third hole extends at an angle of between 30° and 60° with respect to the longitudinal axis of the plate.

33. (new) The plate of claim 26 further comprising at least one hole adapted to receive a fixation pin.

34. (new) The plate of claim 26, wherein upon insertion of the third fixation member through the third hole, into the first bone,



Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

across the joint, and into the second bone, the first and second bones are compressed together to ensure fusion of the joint.

35. (new) The plate of claim 34, wherein compression of the first and second bones is affected once the head of the third fixation member contacts the stop surface of the angled member.

36. (new) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, each of the first and second holes being locking holes adapted to receive first and second fixation members, respectively, a central axis of the first hole being directed into the first but not the second bone, and a central axis of the second hole being directed into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, and a stop surface for engaging with a head of a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

receivable in a cavity formed in at least one of the first and second bones.

37. (new) The implant of claim 36, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

38. (new) The implant of claim 36, wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

39. (new) The implant of claim 38, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

40. (new) The implant of claim 36, wherein the central axis of the third hole extends at an angle of between 30° and 60° with respect to the longitudinal axis of the plate.

41. (new) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, the first and second holes being adapted to receive first and second fixation

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

members, respectively, a central axis of the first hole extending into the first but not the second bone, and a central axis of the second hole extending into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

42. (new) The implant of claim 41, wherein the first and second holes are locking holes.

43. (new) The implant of claim 42, wherein the first and second holes include threading for engaging with the first and second fixation members.

44. (new) The implant of claim 42, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

45. (new) The implant of claim 44, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

46. (new) The implant of claim 41, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

47. (new) The implant of claim 41, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

48. (new) The implant of claim 47, wherein the third hole has a first diameter, and a head of the third fixation member has a second diameter, the second diameter being larger than the first diameter.

49. (new) An implant adapted to span and fuse first and second bone parts, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, at least a first and a second of the plurality of holes being situated on a side of the plate corresponding to the first bone part, each of the first and second holes adapted to receive first and second fixation members, respectively; and

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an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes, the third hole being adapted to receive a third fixation member and being arranged below a guide slot formed in the plate, the guide slot being bounded by side walls extending through the top and bottom surfaces of the plate, wherein the side walls are dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole,

and wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend from the first bone part and into the second bone part.

50. (new) The implant of claim 49, wherein the angled member includes a stop surface for engaging with a head of the third fixation member, the stop surface acting to prevent over-insertion of the third fixation member through the third hole.

51. (new) The implant of claim 50, wherein the stop surface is situated below the guide slot.

52. (new) The implant of claim 51, wherein a central axis of each of the first and second holes extends into the first bone part but not the second bone part.

53. (new) The implant of claim 52, wherein the angled member is situated between and extends below adjacent sides of the plate,

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such that the angled member is receivable in a cavity formed in at least one of the first and second bone parts.

54. (new) The implant of claim 49, wherein some of the plurality of holes are arranged according to the corners of a triangle or a quadrilateral.

55. (new) The implant of claim 52, wherein each of the first and second holes are locking holes.

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**IN THE CLAIMS**

Claims 1-25 (canceled).

26. (new) A bone plate for spanning a joint between first and second bones, the bone plate comprising:

a top surface, a bottom bone-contacting surface, and a plurality of holes formed between the top and bottom surfaces, a first of the plurality of holes being arrangeable on a first side of the joint, and a second of the plurality of holes being arrangeable on a second side of the joint, the first and second holes adapted to receive first and second fixation members, respectively; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member and being arranged below an opening in the plate sized to receive such fixation member, a top face of the angled member including a stop surface for engaging with a head of the third fixation member,

wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that the central axis extends into the first bone, across the joint, and into the second bone.

27. (new) The plate of claim 26, wherein each of the first and second holes are locking holes adapted to engage with the first and second fixation members, respectively.

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28. (new) The plate of claim 26, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

29. (new) The plate of claim 27, wherein a central axis of the first hole extends into the first but not the second bone, and a central axis of the second hole extends into the second but not the first bone.

30. (new) The plate of claim 29, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

31. (new) The plate of claim 30, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

32. (new) The plate of claim 26, wherein the central axis of the third hole extends at an angle of between 30° and 60° with respect to the longitudinal axis of the plate.

33. (new) The plate of claim 26 further comprising at least one hole adapted to receive a fixation pin.

34. (new) The plate of claim 26, wherein upon insertion of the third fixation member through the third hole, into the first bone,



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across the joint, and into the second bone, the first and second bones are compressed together to ensure fusion of the joint.

35. (new) The plate of claim 34, wherein compression of the first and second bones is affected once the head of the third fixation member contacts the stop surface of the angled member.

36. (new) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, each of the first and second holes being locking holes adapted to receive first and second fixation members, respectively, a central axis of the first hole being directed into the first but not the second bone, and a central axis of the second hole being directed into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, and a stop surface for engaging with a head of a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is

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receivable in a cavity formed in at least one of the first and second bones.

37. (new) The implant of claim 36, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

38. (new) The implant of claim 36, wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

39. (new) The implant of claim 38, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

40. (new) The implant of claim 36, wherein the central axis of the third hole extends at an angle of between 30° and 60° with respect to the longitudinal axis of the plate.

41. (new) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, the first and second holes being adapted to receive first and second fixation

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members, respectively, a central axis of the first hole extending into the first but not the second bone, and a central axis of the second hole extending into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

42. (new) The implant of claim 41, wherein the first and second holes are locking holes.

43. (new) The implant of claim 42, wherein the first and second holes include threading for engaging with the first and second fixation members.

44. (new) The implant of claim 42, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

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Docket No.: TRAUMA 3.3-647

45. (new) The implant of claim 44, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

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Docket No.: TRAUMA 3.3-647

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes, the third hole being adapted to receive a third fixation member and being arranged below a guide slot formed in the plate, the guide slot being bounded by side walls extending through the top and bottom surfaces of the plate, wherein the side walls are dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole,

and wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend from the first bone part and into the second bone part.

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Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

**REMARKS**

This communication is submitted in reply to the Restriction Requirement mailed February 21, 2013. Claims 1-25 have been canceled, and new claims 26-55 have been added herein. Claims 26-55 are supported by the original disclosure, as filed. Thus, no new matter has been entered. In this regard, should the Examiner have any question(s) pertaining to support for the new claims, Applicants respectfully request that the Examiner contact Applicants' attorney at the number listed below. The following sets forth Applicants' election in response to the aforementioned Restriction Requirement, along with several remarks, entry and consideration of which is respectfully requested.

In the Restriction Requirement, the Examiner required restriction to one of the following inventions under 35 U.S.C. §121:

Species A - Claims 1-5, 11, and 18-25, drawn to an intervertebral implant including an angled bore defined by a plate body.

Species B - Claims 9-11 and 13-17, drawn to an intervertebral implant including an angled tab including a bore, the angle of the bore being defined by the angle of the tab with respect to the plate body.

In response, Applicants hereby elect the invention of Species B. Also, per a discussion with the Examiner on March 13, 2013, which Applicants respectfully thank the Examiner for participating in, new claims 26-55 are submitted herein, such claims being directed to Species B. Applicants therefore respectfully submit that claims 26-55 read on Species B, and request entry of such claims and examination accordingly.

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

Applicants reserve the right to file a divisional application(s) corresponding to any of the non-elected claims.

In the event any fee is due in connection with the present response, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: March 20, 2013

Respectfully submitted,

Electronic signature:

/Brent L. Farese/

Brent L. Farese

Registration No.: 63,617

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Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

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Application No.: 12/918,071

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Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicants

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<b>AMENDMENT TRANSMITTAL LETTER</b>			Docket No. TRAUMA 3.3-647		
Application No. 12/918,071-Conf. #5973	Filing Date October 29, 2010	Examiner C. J. Beccia	Art Unit 3775		
Applicant(s): Bernard Prandi and Keith Wapner					
Invention: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS					
<b>TO THE COMMISSIONER FOR PATENTS</b>					
Transmitted herewith is an amendment in the above-identified application.					
The fee has been calculated and is transmitted as shown below.					
<b>CLAIMS AS AMENDED</b>					
	Claims Remaining After Amendment	Highest Number Previously Paid	Number Extra Claims Present	Rate	
<b>Total Claims</b>	30	- 22 =	8	x 80.00	640.00
<b>Independent Claims</b>	3	- 3 =	0	x 0.00	0.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					
Other fee (please specify):					
<b>TOTAL ADDITIONAL FEE FOR THIS AMENDMENT:</b>					640.00
<input checked="" type="checkbox"/> Large Entity <input type="checkbox"/> Small Entity					
<input type="checkbox"/> No additional fee is required for this amendment.					
<input checked="" type="checkbox"/> Please charge Deposit Account No. <u>12-1095</u> in the amount of \$ <u>640.00</u> .					
<input type="checkbox"/> A check in the amount of \$ _____ to cover the filing fee is enclosed.					
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
<input checked="" type="checkbox"/> The Director is hereby authorized to charge and credit Deposit Account No. <u>12-1095</u> as described below. A duplicate copy of this sheet is enclosed.					
<input checked="" type="checkbox"/> Credit any overpayment.					
<input checked="" type="checkbox"/> Charge any additional filing or application processing fees required under 37 C.F.R. § 1.16 and 1.17.					
/Brent L. Farese/ Brent L. Farese Attorney/Agent Reg. No.: 63,617 LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP 600 South Avenue West Westfield, New Jersey 07090 (908) 518-6328			Dated: <u>March 20, 2013</u>		
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4). Dated: March 20, 2013 <div style="float: right;">Electronic Signature for Brent L. Farese: /Brent L. Farese/</div>					

Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>	12918071			
<b>Filing Date:</b>	29-Oct-2010			
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS			
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi			
<b>Filer:</b>	Nonna G. Akopyan/Joannah Laluces			
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647			
Filed as Large Entity				
<b>U.S. National Stage under 35 USC 371 Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
Claims in excess of 20	1615	8	80	640
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				640

<b>Electronic Acknowledgement Receipt</b>	
<b>EFS ID:</b>	15311012
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Nonna G. Akopyan/Joannah Lalueces
<b>Filer Authorized By:</b>	Nonna G. Akopyan
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	20-MAR-2013
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	15:54:02
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 640
RAM confirmation Number	2407
Deposit Account	121095
Authorized User	
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)</p> <p>Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)</p>	

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1	Response to Election / Restriction Filed	3083808_1- Response_To_Restriction_Requ irement_1.pdf	37145  e46d62eb05b49f656239ea1def6de3f99ad5a205	no	11
<b>Warnings:</b>					
<b>Information:</b>					
2	Miscellaneous Incoming Letter	3083799_1- Amendment_Transmittal_2.pdf	22047  b68f575438d6ac3aa4356a27addf20fe67d27101	no	1
<b>Warnings:</b>					
<b>Information:</b>					
3	Fee Worksheet (SB06)	fee-info.pdf	30899  e9aa7f4e917a5d17f8fd2e2f67a4f7fdea6602fa	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			90091		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

PTO/SB/06 (07-06)

Approved for use through 1/31/2007. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>12/918,071</b>		Filing Date <b>10/29/2010</b>		<input type="checkbox"/> To be Mailed	
<b>APPLICATION AS FILED – PART I</b>										
(Column 1)			(Column 2)			SMALL ENTITY <input checked="" type="checkbox"/> OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.										
			TOTAL			TOTAL				
<b>APPLICATION AS AMENDED – PART II</b>										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	03/20/2013	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 30	Minus	** 25	=	5		X \$ =		
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	=	1		X \$ =		
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
					TOTAL ADD'L FEE	<b>410</b>	OR	TOTAL ADD'L FEE		
(Column 1)			(Column 2)			(Column 3)				
AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=		X \$ =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=		X \$ =			
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.										
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".										
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



PTO/SB/06 (09-11)  
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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875				Application or Docket Number <b>12/918,071</b>		Filing Date <b>10/29/2010</b>		<input type="checkbox"/> To be Mailed	
ENTITY: <input type="checkbox"/> LARGE <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> MICRO									
<b>APPLICATION AS FILED – PART I</b>									
(Column 1)		(Column 2)							
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)	
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A			
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A			
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A			
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =			
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =			
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).							
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))									
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL			
<b>APPLICATION AS AMENDED – PART II</b>									
(Column 1)		(Column 2)		(Column 3)					
<b>AMENDMENT</b>	<b>03/20/2013</b>		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		
	Total (37 CFR 1.16(i))		* 30		Minus	** 25	= 5		
	Independent (37 CFR 1.16(h))		* 4		Minus	*** 3	= 1		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))								
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						RATE (\$)		ADDITIONAL FEE (\$)	
						X \$40 =		200	
						X \$210 =		210	
						TOTAL ADD'L FEE		<b>410</b>	
(Column 1)		(Column 2)		(Column 3)					
<b>AMENDMENT</b>			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		
	Total (37 CFR 1.16(i))		*		Minus	**	=		
	Independent (37 CFR 1.16(h))		*		Minus	***	=		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))								
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
						RATE (\$)		ADDITIONAL FEE (\$)	
						X \$ =			
						X \$ =			
						TOTAL ADD'L FEE			
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>									

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Document code: WFEE

United States Patent and Trademark Office  
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FFIELDS	SALE	#00000005	Mailroom Dt:	03/20/2013	121095	12918071
		01	FC : 2202	200.00	DA	
		02	FC : 2204	210.00	DA	

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	6730091		2004-05-04	Pfefferle et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	20100016900		2010-01-21	Terres et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>

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	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
<b>EXAMINER SIGNATURE</b>			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> <sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.         </small>			

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number	12918071
	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
	Art Unit	3775
	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2013-03-25
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: March 25, 2013  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

\_\_\_\_\_  
In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Confirmation No.: 5973

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM OF A  
PLATE TO BE FIXED BETWEEN TWO BONE  
PARTS  
\_\_\_\_\_

Examiner: C. J. Beccia

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Madam:

It is respectfully requested that the references listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited references are legally available prior art or that the same are pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: March 25, 2013

Respectfully submitted,

Electronic signature:

/Brent L. Farese/

Brent L. Farese

Registration No.: 63,617

LERNER, DAVID, LITTENBERG, KRUMHOLZ &  
MENTLIK, LLP

600 South Avenue West

Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant(s)

LD-458\

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	15340098
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Nonna G. Akopyan/Joannah Laluces
<b>Filer Authorized By:</b>	Nonna G. Akopyan
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	25-MAR-2013
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	11:27:54
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	no
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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	3086492_1- Information_Disclosure_State ment_Fillable_PDF_1.pdf	612215  9669f832be2368788ece8b43aad327431be1644b	no	4

**Warnings:****Information:**



2	Transmittal Letter	3086497_1-ID5_-_Information_Disclosure_State ment_-_Reference_Enclosed_LD-458_2.pdf	23077  5e0d75889b522963a1d6cce840d981882d92f0a7	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			635292		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

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	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	5827285		1998-10-27	Bramlet			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
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NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>

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	Filing Date	2010-10-29
	First Named Inventor	Bernard Prandi
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	Examiner Name	C. J. Beccia
	Attorney Docket Number	TRAUMA 3.3-647

	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
<b>EXAMINER SIGNATURE</b>			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
<small> <sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.         </small>			

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**OR**

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2013-04-08
Name/Print	Brent L. Farese	Registration Number	63617

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: April 8, 2013  
Electronic Signature for Brent L. Farese: /Brent L. Farese/

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Confirmation No.: 5973

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM OF A  
PLATE TO BE FIXED BETWEEN TWO BONE  
PARTS

Examiner: C. J. Beccia

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**

Dear Madam:

It is respectfully requested that the reference listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited reference is legally available prior art or that the same is pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: April 8, 2013

Respectfully submitted,

Electronic signature:

/Brent L. Farese/

Brent L. Farese

Registration No.: 63,617

LERNER, DAVID, LITTENBERG, KRUMHOLZ &  
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Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant(s)

LD-458\

Electronic Acknowledgement Receipt	
EFS ID:	15454514
Application Number:	12918071
International Application Number:	
Confirmation Number:	5973
Title of Invention:	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
First Named Inventor/Applicant Name:	Bernard Prandi
Customer Number:	530
Filer:	Nonna G. Akopyan/Joannah Laluces
Filer Authorized By:	Nonna G. Akopyan
Attorney Docket Number:	TRAUMA 3.3-647
Receipt Date:	08-APR-2013
Filing Date:	29-OCT-2010
Time Stamp:	11:50:02
Application Type:	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	no
------------------------	----

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	3094747_1- Information_Disclosure_State ment_Fillable_PDF_1.pdf	612004 84f7e0e98a72819f0fb9ab581a7eac0a4544 90ac	no	4

**Warnings:****Information:**

2	Transmittal Letter	3094750_1-IDS_-_Information_Disclosure_State ment_-_Reference_Enclosed_LD-458_2.pdf	23201 29cdf8fd0ba1fbee9c193abdcacdda48fd05f065	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			635205		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					





## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

530	7590	04/11/2013
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090		

EXAMINER	
BECCIA, CHRISTOPHER J	

ART UNIT	PAPER NUMBER
3775	

NOTIFICATION DATE	DELIVERY MODE
04/11/2013	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eOfficeAction@ldlkm.com

<b>Office Action Summary</b>	<b>Application No.</b> 12/918,071		<b>Applicant(s)</b> PRANDI ET AL.	
	<b>Examiner</b> CHRISTOPHER BECCIA		<b>Art Unit</b> 3775	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 20 March 2013.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

5) ☒ Claim(s) 26-55 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

6) ☒ Claim(s) 36-55 is/are allowed.

7) ☒ Claim(s) 26,27 and 29-35 is/are rejected.

8) ☒ Claim(s) 28 is/are objected to.

9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☒ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 18 August 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some    \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.

3) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.

4) ☐ Other: \_\_\_\_.

Continuation Sheet (PTOL-326)

Application No. 12/918,071

Continuation of Attachment(s) 2). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/29/10, 4/24/12, 6/21/12, 12/7/12, 12/20/12, 3/25/13.

Application/Control Number: 12/918,071  
Art Unit: 3775

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species B in the reply filed on March 20, 2013 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Application/Control Number: 12/918,071  
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1. **Claims 26, 27, and 29-35** are rejected under 35 U.S.C. 103(a) as being anticipated by U.S. Patent Pub. No. 2009/0118769 to *Sixto Jr. et al.*

As to **Claim 26**, *Sixto Jr.* discloses a bone plate (200, Fig. 10) for spanning a joint between first and second bones [0118], that includes a top surface (208), a bottom bone-contacting surface (210), and a plurality of holes (226, 220) formed between the top and bottom surfaces (Figs. 9-11), a first of the plurality of holes being arrangeable on a first side of the joint (226, distance between holes seen in Fig. 10 and [0118]), and a second of the plurality of holes being arrangeable on a second side of the joint (220, distance between holes seen in Fig. 10 and [0118]), the first and second holes adapted to receive first and second fixation members [0120], respectively. The plate also includes an angled member (242) recessed below the top surface of the plate (Fig. 10) and extending downward at an angle with respect to the bottom bone-contacting surface [0118]. The angled member including a third of the plurality of holes (222) situated between the first and second holes (Fig. 10), the third hole being adapted to receive a third fixation member [0120] and being arranged below an opening in the plate sized to receive such fixation member (seen in Fig. 10). A top face of the angled member including a stop surface for engaging with a head of the third fixation member (stop surface described in [0120]), wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that the central axis extends into the first bone, across the joint, and into the second bone (seen implanted in Fig. 14).

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As to **Claim 27**, *Sixto Jr.* discloses a bone plate wherein each of the first and second holes are locking holes adapted to engage with the first and second fixation members, respectively (locking screws described in [0120]).

As to **Claim 29**, *Sixto Jr.* discloses a bone plate wherein a central axis of the first hole extends into the first but not the second bone, and a central axis of the second hole extends into the second but not the first bone (distance between bores al

As to **Claim 30**, *Sixto Jr.* discloses a bone plate wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another (curvature seen in Figs. 9-11 and during implantation in Fig. 14, [0118])

As to **Claim 31**, *Sixto Jr.* discloses a bone plate wherein at least three of the plurality of holes are arranged according to the corners of a triangle (triangle formed by 220, 226, and 222 created by angulation of plate seen in Fig. 9).

As to **Claim 32**, *Sixto Jr.* discloses a bone plate wherein the central axis of the third hole extends at an angle of between 30° and 60° with respect to the longitudinal axis of the plate (angulation of bores described in [0028]).

As to **Claim 33**, *Sixto Jr.* discloses a bone plate further comprising at least one hole (238) adapted to receive a fixation pin [0123].

As to **Claim 34**, *Sixto Jr.* discloses a bone plate wherein upon insertion of the third fixation member through the third hole, into the first bone, across the joint, and into the second bone, the first and second bones are compressed together to ensure fusion of the joint (compression described in [0121 and 0020]).

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As to **Claim 35**, *Sixto Jr.* discloses a bone plate wherein compression of the first and second bones is affected once the head of the third fixation member contacts the stop surface of the angled member (stop surface described in [0120]).

### ***Allowable Subject Matter***

2. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
3. Claim 36-55 are allowed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Beccia whose telephone number is (571)270-7391. The examiner can normally be reached on Mon-Fri from 9:00am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Kevin Truong, at (571) 272-4705***. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Page 6

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER BECCIA/  
Examiner, Art Unit 3775

/Kevin T Truong/  
Supervisory Patent Examiner, Art Unit 3775



<b>Notice of References Cited</b>	Application/Control No. 12/918,071	Applicant(s)/Patent Under Reexamination PRANDI ET AL.	
	Examiner CHRISTOPHER BECCIA	Art Unit 3775	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,179,260 B2	02-2007	Gerlach et al.	606/291
*	B	US-2009/0118769 A1	05-2009	Sixto et al.	606/280
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Receipt date: 04/24/2012

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

12918071 - GAU: 3775

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	TRAUMA 3.3-647	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5347894		1994-09-20	Fischer	
	2	5105690		1992-04-21	Lazzara et al.	
	3	4503737		1985-03-12	DiGiovanni	
	4	3552389	A	1971-01-05	Allgower et al.	
	5	4513744	A	1985-04-30	Klaue	
	6	4957496	A	1990-09-18	Schmidt	
	7	4388921	A	1983-06-21	Sutter et al.	
If you wish to add additional U.S. Patent citation information please click the Add button.						Add
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<b>Receipt date: 04/24/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	12918071 - GAU: 3775
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	Not Yet Assigned		
	Attorney Docket Number	TRAUMA 3.3-647		

Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050070904	A1	2005-03-31	Gerlach et al.	
	2	20100274293		2010-10-28	Terrill et al.	
	3	20040214137	A1	2004-10-28	Walton	

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#### FOREIGN PATENT DOCUMENTS

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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup>	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1	2002098306	WO	A1	2002-12-12	Australian Surgical Design And et al.		<input type="checkbox"/>
	2	1897509	EP	A1	2008-03-12	Surge Foot	English language translation of Abstract only.	<input checked="" type="checkbox"/>
	3	2007131287	WO	A1	2007-11-22	Slater, Gordon		<input type="checkbox"/>
	4	3027148	DE	A1	1981-12-03	Straumann Inst Ag	English equivalent is US 4,388,921	<input checked="" type="checkbox"/>
	5	590290	FR	A	1925-06-13	Collin & Cie	English translation of the claims only.	<input checked="" type="checkbox"/>

<b>Receipt date: 04/24/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071	12918071 - GAU: 3775
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	Not Yet Assigned		
	Attorney Docket Number	TRAUMA 3.3-647		

	6	95016403	WO	A1	1995-06-22	Heggeness Michael H et al.		<input type="checkbox"/>
	7	2846870	FR	A1	2004-05-14	Fixano	English language translation of Abstract only	<input checked="" type="checkbox"/>

If you wish to add additional Foreign Patent Document citation information please click the Add button **Add**

#### NON-PATENT LITERATURE DOCUMENTS

**Remove**

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
	1	Manual of Small Animal Fracture Repair And Management, Jan. 1, 1998, pp. 80-81	<input type="checkbox"/>
	2	Catalogue General 1987-1988, plaques d'osteosynthese, bone plates, Division of Pfizer Hospital Products Group, Bagneux, France	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

#### EXAMINER SIGNATURE

Examiner Signature	/Christopher Beccia/	Date Considered	01/21/2013
--------------------	----------------------	-----------------	------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

<b>Receipt date: 04/24/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071      12918071 - GAU: 3775
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	Not Yet Assigned	
	Attorney Docket Number	TRAUMA 3.3-647	

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-04-24
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Receipt date: 04/24/2012

12918071 - GAU: 3775

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	C. J. Beccia	
	Attorney Docket Number	TRAUMA 3.3-647	

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	1	2486303		1949-10-25	Longfellow	
	2	3528085		1970-09-08	Reynolds	
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	1	20010011172		2001-08-02	Orbay et al.	
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	59	20100125300		2010-05-20	Blitz et al.	
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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.B./

Receipt date: 12/07/2012

12918071 - GAU: 3775

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20080161860		2008-07-03	Ahrens et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>



<b>Receipt date: 12/07/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071	12918071 - GAU: 3775
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
<b>EXAMINER SIGNATURE</b>			
Examiner Signature	/Christopher Beccia/		Date Considered 01/21/2013
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>			
<p><sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.</p>			

<b>Receipt date: 12/07/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071      12918071 - GAU: 3775
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	C. J. Beccia	
	Attorney Docket Number	TRAUMA 3.3-647	

### CERTIFICATION STATEMENT

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☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-12-07
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Receipt date: 12/07/2012

12918071 - GAU: 3775

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Receipt date: 03/25/2013

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

12918071 - GAU: 3775

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	6730091		2004-05-04	Pfefferle et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20100016900		2010-01-21	Terres et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
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NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>

<b>Receipt date: 03/25/2013</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071	12918071 - GAU: 3775
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	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
<b>EXAMINER SIGNATURE</b>			
Examiner Signature	/Christopher Beccia/		Date Considered 03/28/2013
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>			
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Name/Print	Brent L. Farese	Registration Number	63617

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12918071 - GAU: 3775

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<b><i>Index of Claims</i></b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>


<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
CLAIM		DATE							
Final	Original	02/13/2013	04/05/2013						
	1	÷	-						
	2	÷	-						
	3	÷	-						
	4	÷	-						
	5	÷	-						
	6	-	-						
	7	-	-						
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	23	÷	-						
	24	÷	-						
	25	÷	-						
	26		✓						
	27		✓						
	28		O						
	29		✓						
	30		✓						
	31		✓						
	32		✓						
	33		✓						
	34		✓						
	35		✓						
	36		=						



<b><i>Index of Claims</i></b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
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<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA				<input type="checkbox"/> T.D.				<input type="checkbox"/> R.1.47			
CLAIM		DATE													
Final	Original	02/13/2013	04/05/2013												
	37		=												
	38		=												
	39		=												
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	50		=												
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	55		=												

<b>Search Notes</b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
606	60, 70, 71, 280-299, 246-279	4/5/2013	CJB

SEARCH NOTES		
Search Notes	Date	Examiner
EAST Search Attached	4/5/2013	CJB
Inventor Search	4/5/2013	CJB

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

/CHRISTOPHER BECCIA/  
Examiner.Art Unit 3775

Doc Code: I D S  
 Receipt date: 10/29/2010  
 Doc Description: Information Disclosure Statement (I D S) filed.

PTO/SB/08a  
 12918071 - GAU: 3775

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Application number		12/918,071		
				Filing date		18 August 2010		
				First Named Inventor		Bernard PRANDI et al		
				Art Unit				
				Examiner name				
				Attorney Docket Number		30064		
<b>U.S. PATENTS</b>								
Ex. Initials	Cite No.	Patent Number	Kind Code	Issue Date	Name of Patentee or Applicant	Pages, columns, lines where Relevant Passages or relevant Figs. appear		
	1	7179260	B	02-2007	Gerlach			
	2							
	3							
	4							
	5							
	6							
<b>U.S. PATENT APPLICATION PUBLICATIONS</b>								
Ex. Initials	Cite No.	Publication Number	Kind Code	Publication date	Name of Patentee or Applicant	Pages, columns, lines where Relevant Passages or relevant Figs. appear		
	1	20080114360	A	05-2008	DaFrota Carrera			
	2	20040172028	A	09-2004	Roger			
	3							
<b>FOREIGN PATENT DOCUMENTS</b>								
Ex. Initials	Cite No.	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant	Pages, columns, lines where Relevant Passages or relevant Figs. appear	Tra ?
	1	8227727	DE	U	01-1983	----		N
	2	3630862	DE	A	03-1988	Anapliotis		N
	3	590290	FR	B	03-1925	Lauwens		N
	4							
	5							
<b>NON-PATENT LITERATURE</b>								
Ex. Initials	Cite No.	AUTHOR NAME, Article Title, Book Title, Date, Page(s), Vol/Iss. No., Publisher, City/Country						
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	2							
<b>EXAMINER SIGNATURE</b>								
Examiner Signature		/Christopher Beccia/		Date Considered		01/21/2013		

29 October 2010

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KF Ross PC  
 Customer Number 535  
 5683 Riverdale Ave. Box 900  
 Bronx (Riverdale), NY 10471  
 30064PTOSB81.WPD

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.B./

EAST Search History

**EAST Search History****EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"12918071"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:53
S2	44	prandi-bernard.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:53
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OR US-7137987-\$.DID. OR US-7326218-\$.DID. OR US-7341589-\$.DID. OR US-3364742-\$.DID. OR US-7344538-\$.DID. OR US-7491220-\$.DID. OR US-7695472-\$.DID. OR US-7766948-\$.DID. OR US-7771457-\$.DID. OR US-7799061-\$.DID. OR US-7819903-\$.DID. OR US-7857836-\$.DID. OR US-7931680-\$.DID. OR US-8080010-\$.DID. OR US-8100954-\$.DID. OR US-3364753-\$.DID. OR US-8100983-\$.DID. OR US-D587370-\$.DID. OR US-D596294-\$.DID. OR US-D623745-\$.DID. OR US-20010011172-\$.DID. OR US-20010047172-\$.DID. OR US-20020045901-\$.DID. OR US-20020183752-\$.DID. OR US-20030060827-\$.DID. OR US-20030195516-\$.DID. OR US-20030199875-\$.DID. OR US-20040059334-\$.DID. OR US-20040092929-\$.DID. OR US-20040093081-\$.DID. OR US-20040167522-\$.DID. OR US-20040181228-\$.DID. OR US-20040186477-\$.DID. OR US-20040210234-\$.DID. OR US-3364715-\$.DID. OR US-20040236332-\$.DID. OR US-20050015089-\$.DID. OR US-20050080421-\$.DID. OR US-20050085913-\$.DID. OR US-20050090825-\$.DID. OR US-20050171544-\$.DID. OR US-20050182408-\$.DID. OR US-20050277937-\$.DID. OR US-20060004362-\$.DID. OR US-20060015102-\$.DID. OR US-20060058796-\$.DID. OR US-3364726-\$.DID. OR US-20060106387-\$.DID. OR US-20060149261-\$.DID. OR US-20060173459-\$.DID. OR US-20060200145-\$.DID. OR US-20060235397-\$.DID. OR US-20060241607-\$.DID. OR US-20060241608-\$.DID. OR US-20060241609-\$.DID. OR US-20070142920-\$.DID. OR US-20070233106-\$.DID. OR US-20070270850-\$.DID. OR US-3364737-\$.DID. OR US-20080015593-\$.DID. OR US-20080051791-\$.DID. OR US-20080091197-\$.DID. OR US-20080132960-\$.DID. OR US-20080208262-\$.DID. OR US-20080249572-\$.DID. OR US-20080249573-\$.DID. OR US-20090024173-\$.DID. OR US-20090036933-\$.DID. OR US-20090093849-\$.DID. OR US-20090198285-\$.DID. OR US-3364748-\$.DID. OR US-20090210010-\$.DID. OR US-20090210011-\$.DID. OR US-20090210013-\$.DID. OR US-20090228048-\$.DID. OR US-20090234359-\$.DID. OR US-

## EAST Search History

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**EAST Search History (Interference)**

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## BIB DATA SHEET

CONFIRMATION NO. 5973

<b>SERIAL NUMBER</b> 12/918,071	<b>FILING or 371(c) DATE</b> 10/29/2010 <b>RULE</b>	<b>CLASS</b> 606	<b>GROUP ART UNIT</b> 3775	<b>ATTORNEY DOCKET NO.</b> TRAUMA 3.3-647	
<b>APPLICANTS</b> Bernard Prandi, Rennes, FRANCE; Keith Wapner, Philadelphia, PA; <b>** CONTINUING DATA *****</b> This application is a 371 of PCT/FR09/51879 10/02/2009 <b>** FOREIGN APPLICATIONS *****</b> FRANCE 0856694 10/02/2008 <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** * SMALL ENTITY **</b> 11/10/2010					
Foreign Priority claimed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 35 USC 119(a-d) conditions met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Verified and /CHRISTOPHER J BECCIA/ Acknowledged Examiner's Signature	<input type="checkbox"/> Met after Allowance Initials	<b>STATE OR COUNTRY</b> FRANCE	<b>SHEETS DRAWINGS</b> 2	<b>TOTAL CLAIMS</b> 7	<b>INDEPENDENT CLAIMS</b> 1
<b>ADDRESS</b> LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090 UNITED STATES					
<b>TITLE</b> ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS					
<b>FILING FEE RECEIVED</b> 665	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

Receipt date: 12/20/2012

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

12918071 - GAU: 3775

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	6576018		2003-06-10	Holt			
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Examiner Initial*	Cite No	Publication Number	Kind Code <sup>1</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
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Examiner Initial*	Cite No	Foreign Document Number <sup>3</sup>	Country Code <sup>2</sup> j	Kind Code <sup>4</sup>	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T <sup>5</sup>
	1							<input type="checkbox"/>
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NON-PATENT LITERATURE DOCUMENTS							Remove	
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T <sup>5</sup>

<b>Receipt date: 12/20/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071	12918071 - GAU: 3775
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

	1		<input type="checkbox"/>
If you wish to add additional non-patent literature document citation information please click the Add button <b>Add</b>			
<b>EXAMINER SIGNATURE</b>			
Examiner Signature	/Christopher Beccia/		Date Considered 01/21/2013
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>			
<p><sup>1</sup> See Kind Codes of USPTO Patent Documents at <a href="http://www.USPTO.GOV">www.USPTO.GOV</a> or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.</p>			

<b>Receipt date: 12/20/2012</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071      12918071 - GAU: 3775
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	C. J. Beccia	
	Attorney Docket Number	TRAUMA 3.3-647	

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2012-12-20
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Receipt date: 12/20/2012

12918071 - GAU: 3775

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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: June 3, 2013  
Electronic Signature for Brent L. Farese: /Brent L. Farese /

Docket No.: TRAUMA 3.3-647  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Prandi et al.

Application No.: 12/918,071

Filed: October 29, 2010

Art Unit: 3775

For: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS  
Examiner: C.J. Beccia

**REQUEST TO CORRECT INVENTORSHIP UNDER 37 C.F.R. § 1.48(a)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Madam:

This request is filed pursuant to 37 C.F.R. § 1.48(a) to add several inventors to the above-noted patent application.

Please add the following previously unnamed persons as inventors of this application: Charles P. Wapner and Peter W. Wapner.

Attached are the following:

- A. A Supplemental Application Data Sheet; and
- B. A Declaration by each added inventor as required by 37 C.F.R. § 1.63 (or as permitted by § 1.64) pursuant to 37 C.F.R. § 1.48(b).

Request to Correct Inventorship.DOC

Application No.: 12/918,071

Docket No.: TRAUMA 3.3-647

Please charge the fee of \$140 pursuant to 37 C.F.R. § 1.17(i) and any other fee which may be due in connection with this Request to Deposit Account No. 12-1095.

Dated: June 3, 2013

Respectfully submitted,  
Electronic signature:  
/Brent L. Farese/  
Brent L. Farese  
Registration No.: 63,617  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000  
Attorney for Applicants



Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>	12918071			
<b>Filing Date:</b>	29-Oct-2010			
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS			
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi			
<b>Filer:</b>	Nonna G. Akopyan/Joannah Laluces			
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647			
Filed as Large Entity				
<b>U.S. National Stage under 35 USC 371 Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
Petition fee- 37 CFR 1.17(h) (Group III)	1464	1	140	140
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				140

<b>Electronic Acknowledgement Receipt</b>	
<b>EFS ID:</b>	15934478
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Nonna G. Akopyan/Joannah Laluces
<b>Filer Authorized By:</b>	Nonna G. Akopyan
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	03-JUN-2013
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	16:40:48
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

**Payment information:**

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 140
RAM confirmation Number	3992
Deposit Account	121095
Authorized User	
<p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>Charge any Additional Fees required under 37 C.F.R. 1.492 (National application filing, search, and examination fees)</p> <p>Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)</p>	

<b>File Listing:</b>					
<b>Document Number</b>	<b>Document Description</b>	<b>File Name</b>	<b>File Size(Bytes)/ Message Digest</b>	<b>Multi Part /.zip</b>	<b>Pages (if appl.)</b>
1	Application Data Sheet	Supplemental_ADS_1.pdf	15499 4cbff79da218f8786e1bf3c92c6c4846a71dd5	no	2
<b>Warnings:</b>					
<b>Information:</b>					
This is not an USPTO supplied ADS fillable form					
2	Oath or Declaration filed	EXECUTED_OLD_DECLARATION_-_WAPNER_3_2.pdf	343152 2608d48e90d68e3b6555e3e70fb6c51749719f8a	no	3
<b>Warnings:</b>					
<b>Information:</b>					
3	Petition for review by the Technology Center SPRE.	Request_to_Correct_Inventors_hip_3.pdf	25268 e4e65d8911a5e59557c72588bdfa1fe3e43f6362	no	2
<b>Warnings:</b>					
<b>Information:</b>					
4	Fee Worksheet (SB06)	fee-info.pdf	30635 5a1047bc88c5a7d17b13d43cf693a9123dd51958	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			414554		
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

TRAUMA 3.3-647.

**Supplemental Application Data Sheet**

**Application Information**

Application number:: 12/918,071  
Filing Date:: 10/29/10  
Title:: ORTHOPEDIC IMPLANT IN THE  
FORM OF A PLATE TO BE FIXED  
BETWEEN TWO BONE PARTS

**Applicant Information**

Please add the following two inventors as inventors number 3 and 4:

Inventor 3:

Given Name:: Charles  
Middle Name:: P.  
Family Name:: Wapner  
City of Residence:: Media  
State or Province of Residence:: PA  
Country of Residence:: US  
Street of mailing address:: 651 North Heilbron Drive  
City of mailing address:: Media  
State or Province of mailing address:: PA  
Postal or Zip Code of mailing address:: 19063

Inventor 4:

Given Name:: Peter  
Middle Name:: W.  
Family Name:: Wapner  
City of Residence:: Media

TRAUMA 3.3-647.

State or Province of Residence:: PA

Country of Residence:: US

Street of mailing address:: 651 North Heilbron Drive

City of mailing address:: Media

State or Province of mailing address:: PA

Postal or Zip Code of mailing address:: 19063

**Signature:**

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18.  
Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date	June 3, 2013
Name (Print/Type)	Brent L. Farese	Registration No. (Attorney/Agent)	63,617

<b>DECLARATION AND POWER OF ATTORNEY FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)</b>		Attorney Docket Number		TRAUMA 3.3-647	
		First Named Inventor		Bernard Prandi	
		<b>COMPLETE IF KNOWN</b>			
		Application Number		12/918,071	
<input type="checkbox"/> Declaration Submitted with Initial Filing <b>OR</b> <input checked="" type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (f)) required)		Filing Date		October 29, 2010	
		Group Art Unit		3775	
		Examiner Name		C. J. Beccia	

**As a below named inventor, I hereby declare that:**

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am an original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

(Title of the Invention)

the specification of which

☐ is attached hereto      **OR**      ☒ was filed on (MM/DD/YYYY) 10/29/2010 as United States Application Number or PCT International Application No. 12/918,071 and was amended on (MM/DD/YYYY)  (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

**Authorization To Permit Access To Application by Participating Offices**

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to: 1) the above-identified application, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified US application, and 3) any U.S. application from which benefit is sought in the above-identified application.


In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

**Claim of Foreign Priority Benefits**

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
0856694	FR	10/02/2008	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

<b>DECLARATION AND POWER OF ATTORNEY — Utility or Design Patent Application</b>			
<b>POWER OF ATTORNEY:</b> As a named inventor, I hereby appoint the practitioners associated with the following Customer Number as my/our attorneys or agents to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith: Customer Number 51640			
Direct all correspondence to:		<input checked="checked" type="checkbox"/> The address associated with Customer Number:	<div style="border: 1px solid black; padding: 2px 10px;">00530</div>
		OR <input type="checkbox"/> Correspondence address below	
Name			
Address			
City		State	ZIP
Country		Telephone	Email
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF SOLE OR FIRST INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) Bernard		Family Name or Surname Prandi	
Inventor's Signature		Date	
Residence: City Rennes	State	Country France	Citizenship France
Mailing Address: 57 Rue René-Louis Gallouedec			
City Rennes	State	ZIP	Country France
NAME OF SECOND INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) Keith		Family Name or Surname Wapner	
Inventor's Signature 		Date 10/30/12	
Residence: City Philadelphia	State PA	Country United States of America	Citizenship US
Mailing Address: 230 W. Washington Square FL5			
City Philadelphia	State PA	ZIP 19106	Country United States of America
<input checked="checked" type="checkbox"/> Additional inventors are being named on the <u>1</u> supplemental Additional Inventor(s) sheet(s) attached hereto.			

LD-537A



PTO/SB/02A (07-07)

Approved for use through 01/31/2014. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION		ADDITIONAL INVENTOR(S) Supplemental Sheet		Page 1 of 1
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))		Family Name or Surname		
Charles P.		Wapner		
Inventor's Signature		Date		Citizenship
Media		PA		US
Residence: City		State	United States of America	Citizenship
651 North Heilbron Drive				
Mailing Address				
City		State	Zip	Country
Media		PA	19063	United States of America
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))		Family Name or Surname		
Peter W.		Wapner		
Inventor's Signature		Date		Citizenship
Media		PA		US
Residence: City		State	United States of America	Citizenship
651 North Heilbron Drive				
Mailing Address:				
City		State	Zip	Country
Media		PA	19063	United States of America
Name of Additional Joint Inventor, if any:		<input type="checkbox"/> A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))		Family Name or Surname		
Inventor's Signature		Date		
Residence: City		State	Country	Citizenship
Mailing Address:				
City		State	Zip	Country



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

530	7590	06/06/2013
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090		

EXAMINER	
BECCIA, CHRISTOPHER J	

ART UNIT	PAPER NUMBER
3775	

NOTIFICATION DATE	DELIVERY MODE
06/06/2013	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eOfficeAction@ldlkm.com

<b><i>Applicant-Initiated Interview Summary</i></b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	12/918,071	PRANDI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	CHRISTOPHER BECCIA	3775	

All participants (applicant, applicant's representative, PTO personnel):

(1) CHRISTOPHER BECCIA. (3) \_\_\_\_.

(2) Brent Farese. (4) \_\_\_\_.

Date of Interview: 30 May 2013.

Type: ☒ Telephonic ☐ Video Conference  
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.  
If Yes, brief description: \_\_\_\_.

Issues Discussed ☐101 ☐112 ☒102 ☐103 ☐Others  
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 26.

Identification of prior art discussed: 2009/0118769 to Sixto Jr..

**Substance of Interview**  
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

It was agreed upon that claims 26-35 would be canceled and claims 36-55 would remain allowable. Discussion of proposed new dependent claims 56-74 appeared to also be allowable, as being dependent from an allowed claim, and introducing no new matter.

**Applicant recordation instructions:** The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

**Examiner recordation instructions:** Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

/CHRISTOPHER BECCIA/ Examiner, Art Unit 3775	/Kevin T Truong/ Supervisory Patent Examiner, Art Unit 3775
---	--

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

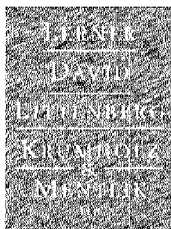
### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

05/29/2013 11:41 FAX 19086547866

LDLKM

001/011



600 SOUTH AVENUE WEST • WESTFIELD, NEW JERSEY 07090  
908.654.5000 • FAX 908.654.7866 • WWW.LDLKM.COM

PATENTS, TRADEMARKS, COPYRIGHTS & UNFAIR COMPETITION

## Facsimile Transmittal

To:	Fax Number	Voice Number
Examiner Christopher Beccia	571-270-8391	571-270-7391

Date: May 29, 2013

No. Pages: 11

File Name.: TRAUMA 3.3-647

### MESSAGE:

Please see attached.

NOTICE: The information contained herein is intended only for the addressee identified above. It may be or may include material that is confidential, attorney-client privileged, attorney work product, copyrighted, and/or inside information. If you are not the intended recipient, or a person responsible for delivering this message to the intended recipient, you are hereby notified that the unauthorized use, disclosure, distribution or copying is strictly prohibited and may be in violation of court order or otherwise unlawful. If you have received this transmission in error, please immediately notify us at 908 654 5000 (collect, if necessary) and return this document to us by mail.

05/29/2013 11:41 FAX 19086547866

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002/011



600 SOUTH AVENUE WEST • WESTFIELD, NEW JERSEY 07090  
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CHINA: UNIT 3405A • TEEM TOWER • 208 TANHE ROAD • TIANHE DISTRICT  
GUANGZHOU, GUANGDONG 510620 • CHINA • T: +86 20 3810-3788 • F: +86 20 3810-3789

INTELLECTUAL PROPERTY LAW

Brent L. Farese  
908.518.6328  
bfarese@ldlkm.com

May 29, 2013

VIA FACSIMILE (571-270-8391)

Examiner Christopher Beccia  
U.S. Patent and Trademark Office  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Re: TRAUMA 3.3-647  
ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE  
TO BE FIXED BETWEEN TWO BONE PARTS  
Application No.: 12/918,071

Dear Examiner Beccia:

Please find enclosed a proposed Agenda concerning the interview to take place Thursday, May 30, 2013 at 11:00 A.M. Should you have any questions concerning the attached Agenda, or any other matter related to this case, please do not hesitate to contact us.

Sincerely,

LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP

BRENT L. FARESE

BLF/cbb  
Enclosure

3176411\_1.doc

05/29/2013 11:42 FAX 19086547866

LDLKM

003/011

FOR DISCUSSION PURPOSES ONLY

PROPOSED AGENDA FOR INTERVIEW  
CONCERNING U.S. PATENT APPLICATION  
SERIAL NO. 12/918,071

- Discuss cancelation of certain claims in light of Official Action dated April 11, 2013.
- Discuss possible new dependent claims (see Exhibit A).
- Discuss changes to Abstract in light of suggestions in the Office Action.

NOTE - It is to be understood that the present communication and the attached exhibit were prepared at the request of the Examiner. It is meant only for discussion purposes, and thusly, should not be interpreted to limit the claims of the '071 Application in any way. Moreover, Applicants reserve the right to formally submit or not submit, or even further amend or otherwise change, the claims attached in Exhibit A.

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## FOR DISCUSSION PURPOSES ONLY

EXHIBIT A

Claims 1-35 (canceled).

36. (previously presented) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, each of the first and second holes being locking holes adapted to receive first and second fixation members, respectively, a central axis of the first hole being directed into the first but not the second bone, and a central axis of the second hole being directed into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, and a stop surface for engaging with a head of a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.



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37. (previously presented) The implant of claim 36, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

38. (previously presented) The implant of claim 36, wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

39. (previously presented) The implant of claim 38, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

40. (currently amended) The implant of claim 36, wherein the central axis of the third hole extends at an angle of between about 30° and 60° with respect to the longitudinal axis of the plate.

41. (previously presented) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, the first and second holes being adapted to receive first and second fixation members, respectively, a central axis of the

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first hole extending into the first but not the second bone, and a central axis of the second hole extending into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

42. (previously presented) The implant of claim 41, wherein the first and second holes are locking holes.

43. (previously presented) The implant of claim 42, wherein the first and second holes include threading for engaging with the first and second fixation members.

44. (previously presented) The implant of claim 42, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

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45. (previously presented) The implant of claim 44, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

46. (previously presented) The implant of claim 41, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

47. (previously presented) The implant of claim 41, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

48. (previously presented) The implant of claim 47, wherein the third hole has a first diameter, and a head of the third fixation member has a second diameter, the second diameter being larger than the first diameter.

49. (previously presented) An implant adapted to span and fuse first and second bone parts, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, at least a first and a second of the plurality of holes being situated on a side of the plate corresponding to the first bone part, each of the first and second holes adapted to receive first and second fixation members, respectively; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the

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bottom bone-contacting surface, the angled member including a third of the plurality of holes, the third hole being adapted to receive a third fixation member and being arranged below a guide slot formed in the plate, the guide slot being bounded by side walls extending through the top and bottom surfaces of the plate, wherein the side walls are dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole,

and wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend from the first bone part and into the second bone part.

50. (previously presented) The implant of claim 49, wherein the angled member includes a stop surface for engaging with a head of the third fixation member, the stop surface acting to prevent over-insertion of the third fixation member through the third hole.

51. (previously presented) The implant of claim 50, wherein the stop surface is situated below the guide slot.

52. (previously presented) The implant of claim 51, wherein a central axis of each of the first and second holes extends into the first bone part but not the second bone part.

53. (previously presented) The implant of claim 52, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bone parts.

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54. (previously presented) The implant of claim 49, wherein some of the plurality of holes are arranged according to the corners of a triangle or a quadrilateral.

55. (previously presented) The implant of claim 52, wherein each of the first and second holes are locking holes.

56. (new) The implant of claim 49, wherein the central axis of the third hole diverges from a central axis of at least one of the plurality of holes.

57. (new) The implant of claim 56, wherein the at least one of the plurality of holes is a locking hole.

58. (new) The implant of claim 49, wherein a portion of the implant is insertable in a cavity formed in at least one of the first and second bone parts.

59. (new) The implant of claim 49, wherein the angled member is angled at between about 30° and 60° with respect to the longitudinal axis of the plate.

60. (new) The implant of claim 36, further comprising at least one hole adapted to receive a fixation pin.

61. (new) The implant of claim 36, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

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62. (new) The implant of claim 61, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

63. (new) The implant of claim 36, wherein the first and second holes include threading for engaging with the first and second fixation members.

64. (new) The implant of claim 41, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

65. (new) The implant of claim 64, wherein the central axis of the third hole extends at an angle of between about 30° and 60° with respect to the longitudinal axis of the plate.

66. (new) A system including the implant of claim 36, in which the system further comprises screws for insertion into the plurality of holes of the implant.

67. (new) The system of claim 66, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

68. (new) The system of claim 67, wherein the template does not include an angled member.

69. (new) A system including the implant of claim 41, in which the system further comprises screws for insertion into the plurality of holes of the implant.

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70. (new) The system of claim 69, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

71. (new) The system of claim 70, wherein the template does not include an angled member.

72. (new) A system including the implant of claim 49, in which the system further comprises screws for insertion into the plurality of holes of the implant.

73. (new) The system of claim 72, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

74. (new) The system of claim 73, wherein the template does not include an angled member.

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## UNITED STATES PATENT AND TRADEMARK OFFICE

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## NOTICE OF ALLOWANCE AND FEE(S) DUE

530 7590 06/13/2013  
 LERNER, DAVID, LITTENBERG,  
 KRUMHOLZ & MENTLIK  
 600 SOUTH AVENUE WEST  
 WESTFIELD, NJ 07090

EXAMINER

BECCIA, CHRISTOPHER J

ART UNIT

PAPER NUMBER

3775

DATE MAILED: 06/13/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

TITLE OF INVENTION: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$890	\$300	\$0	\$1190	09/13/2013

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**



**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

530 7590 06/13/2013  
**LERNER, DAVID, LITTENBERG,**  
**KRUMHOLZ & MENTLIK**  
**600 SOUTH AVENUE WEST**  
**WESTFIELD, NJ 07090**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

TITLE OF INVENTION: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$890	\$300	\$0	\$1190	09/13/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
BECCIA, CHRISTOPHER J	3775	606-286000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

**5. Change in Entity Status** (from status indicated above)☐ Applicant certifying micro entity status. See 37 CFR 1.29☐ Applicant asserting small entity status. See 37 CFR 1.27☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

EXAMINER
BECCIA, CHRISTOPHER J

ART UNIT	PAPER NUMBER
3775	

530 7590 06/13/2013  
 LERNER, DAVID, LITTENBERG,  
 KRUMHOLZ & MENTLIK  
 600 SOUTH AVENUE WEST  
 WESTFIELD, NJ 07090

DATE MAILED: 06/13/2013

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
 (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 420 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 420 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

### Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>Notice of Allowability</b>	<b>Application No.</b> 12/918,071	<b>Applicant(s)</b> PRANDI ET AL.	
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775	<b>AIA (First Inventor to File) Status</b> No

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant Initiated Interview of May 30, 2013.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 36-74. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
**Certified copies:**  
a) ☒ All    b) ☐ Some    \*c) ☐ None of the:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_\_.  
**Interim copies:**  
a) ☐ All    b) ☐ Some    c) ☐ None of the: Interim copies of the priority documents have been received.  
Applicant has **THREE MONTHS FROM THE "MAILING DATE"** of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in **ABANDONMENT** of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**
5. ☐ **CORRECTED DRAWINGS** ( as "replacement sheets") must be submitted.  
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ **DEPOSIT OF and/or INFORMATION** about the deposit of **BIOLOGICAL MATERIAL** must be submitted. Note the attached Examiner's comment regarding **REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL**.

**Attachment(s)**

1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>4/8/13</u> 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 4. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____.	5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 6. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 7. <input type="checkbox"/> Other _____.
--	--

/CHRISTOPHER BECCIA/ Examiner, Art Unit 3775	/Kevin T Truong/ Supervisory Patent Examiner, Art Unit 3775
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Application/Control Number: 12/918,071  
Art Unit: 3775

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### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brent Farese on May 30, 2013.

Please amend application as follows:

Claims 1-35 are hereby canceled.

The abstract should now read:

The invention relates to a plate fixed between two bone parts by way of screws engaged in holes formed in the thickness of the plate. The plate comprises an angled member or rib which is inclined according to an angle of between about 30° and 60° in relation to the plane defined by the plate. The angled member or rib has a hole for engaging a screw and is located in the central part of the width, over a determined part of the length of the plate, so that the screw brings the two bone parts into a compressive position.

The claims now should read:

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36. (previously presented) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, each of the first and second holes being locking holes adapted to receive first and second fixation members, respectively, a central axis of the first hole being directed into the first but not the second bone, and a central axis of the second hole being directed into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, and a stop surface for engaging with a head of a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

37. (previously presented) The implant of claim 36, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

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38. (previously presented) The implant of claim 36, wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

39. (previously presented) The implant of claim 38, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

40. (currently amended) The implant of claim 36, wherein the central axis of the third hole extends at an angle of between about 30° and 60° with respect to the longitudinal axis of the plate.

41. (previously presented) An implant for compressing together first and second bone parts separated by a joint, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, wherein a first of the plurality of holes is arrangeable on a first side of the joint, and a second of the plurality of holes is arrangeable on a second side of the joint, the first and second holes being adapted to receive first and second fixation members, respectively, a central axis of the



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first hole extending into the first but not the second bone, and a central axis of the second hole extending into the second but not the first bone; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes situated between the first and second holes, the third hole being adapted to receive a third fixation member, a central axis of the third hole being angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend into the first bone, across the joint, and into the second bone,

wherein the angled member is situated below a guide slot formed in the plate, the guide slot being adapted to allow insertion of the third fixation member through the guide slot and into the third hole.

42. (previously presented) The implant of claim 41, wherein the first and second holes are locking holes.

43. (previously presented) The implant of claim 42, wherein the first and second holes include threading for engaging with the first and second fixation members.

44. (previously presented) The implant of claim 42, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of

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the plate arranging at least two of the fixation members at an angle with respect to one another.

45. (previously presented) The implant of claim 44, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

46. (previously presented) The implant of claim 41, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bones.

47. (previously presented) The implant of claim 41, wherein the guide slot is bounded by side walls extending through the top and bottom surfaces of the plate, the side walls being dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole.

48. (previously presented) The implant of claim 47, wherein the third hole has a first diameter, and a head of the third fixation member has a second diameter, the second diameter being larger than the first diameter.

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49. (previously presented) An implant adapted to span and fuse first and second bone parts, the implant comprising:

a plate having a top surface, a bottom bone-contacting surface, and a plurality of holes formed through the top and bottom surfaces, at least a first and a second of the plurality of holes being situated on a side of the plate corresponding to the first bone part, each of the first and second holes adapted to receive first and second fixation members, respectively; and

an angled member recessed below the top surface of the plate and extending downward at an angle with respect to the bottom bone-contacting surface, the angled member including a third of the plurality of holes, the third hole being adapted to receive a third fixation member and being arranged below a guide slot formed in the plate, the guide slot being bounded by side walls extending through the top and bottom surfaces of the plate, wherein the side walls are dimensioned to allow insertion of the third fixation member through the guide slot and into the third hole,

and wherein a central axis of the third hole is angled with respect to a longitudinal axis of the plate, such that when the third fixation member is inserted through the third hole, it is arranged to extend from the first bone part and into the second bone part.

50. (previously presented) The implant of claim 49, wherein the angled member includes a stop surface for engaging with a head of the third fixation member,

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the stop surface acting to prevent over-insertion of the third fixation member through the third hole.

51. (previously presented) The implant of claim 50, wherein the stop surface is situated below the guide slot.

52. (previously presented) The implant of claim 51, wherein a central axis of each of the first and second holes extends into the first bone part but not the second bone part.

53. (previously presented) The implant of claim 52, wherein the angled member is situated between and extends below adjacent sides of the plate, such that the angled member is receivable in a cavity formed in at least one of the first and second bone parts.

54. (previously presented) The implant of claim 49, wherein some of the plurality of holes are arranged according to the corners of a triangle or a quadrilateral.

55. (previously presented) The implant of claim 52, wherein each of the first and second holes are locking holes.

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56. (new) The implant of claim 49, wherein the central axis of the third hole diverges from a central axis of at least one of the plurality of holes.

57. (new) The implant of claim 56, wherein the at least one of the plurality of holes is a locking hole.

58. (new) The implant of claim 49, wherein a portion of the implant is insertable in a cavity formed in at least one of the first and second bone parts.

59. (new) The implant of claim 49, wherein the angled member is angled at between about 30° and 60° with respect to the longitudinal axis of the plate.

60. (new) The implant of claim 36, further comprising at least one hole adapted to receive a fixation pin.

61. (new) The implant of claim 36, wherein the plate is curved so as to adapt to the curvature of the first and second bones, the curvature of the plate arranging at least two of the fixation members at an angle with respect to one another.

62. (new) The implant of claim 61, wherein at least three of the plurality of holes are arranged according to the corners of a triangle, or at least four of the plurality of holes are arranged according to the corners of a quadrilateral.

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63. (new) The implant of claim 36, wherein the first and second holes include threading for engaging with the first and second fixation members.

64. (new) The implant of claim 41, wherein the angled member is a tab extending from the bottom bone-contacting surface of the plate.

65. (new) The implant of claim 64, wherein the central axis of the third hole extends at an angle of between about 30° and 60° with respect to the longitudinal axis of the plate.

66. (new) A system including the implant of claim 36, in which the system further comprises screws for insertion into the plurality of holes of the implant.

67. (new) The system of claim 66, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

68. (new) The system of claim 67, wherein the template does not include an angled member.

69. (new) A system including the implant of claim 41, in which the system further comprises screws for insertion into the plurality of holes of the implant.

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70. (new) The system of claim 69, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

71. (new) The system of claim 70, wherein the template does not include an angled member.

72. (new) A system including the implant of claim 49, in which the system further comprises screws for insertion into the plurality of holes of the implant.

73. (new) The system of claim 72, further comprising a template of the plate for use in determining the positioning of the angled member against bone.

74. (new) The system of claim 73, wherein the template does not include an angled member.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Beccia whose telephone number is (571)270-7391. The examiner can normally be reached on Mon-Fri from 9:00am – 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Kevin Truong, at (571) 272-4705***. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER BECCIA/  
Examiner, Art Unit 3775

/Kevin T Truong/  
Supervisory Patent Examiner, Art Unit 3775



<b>Search Notes</b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

CPC- SEARCHED		
Symbol	Date	Examiner


CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
606	60, 70, 71, 280-299, 246-279	4/5/2013	CJB

SEARCH NOTES		
Search Notes	Date	Examiner
EAST Search Attached	4/5/2013	CJB
Inventor Search	4/5/2013	CJB
EAST Search Attached	6/3/2013	CJB

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	See Attached EAST Search	6/3/2013	CJB

/CHRISTOPHER BECCIA/  
Examiner.Art Unit 3775


<b>Issue Classification</b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

CPC			Type	Version
Symbol				


CPC Combination Sets						
Symbol			Type	Set	Ranking	Version

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION													
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED								
606		286				A	6	1	B	17 / 80 (2006.01.01)									
CROSS REFERENCE(S)																			
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																		

/CHRISTOPHER BECCIA/ Examiner, Art Unit 3775  (Assistant Examiner)	06/03/2013  (Date)	<b>Total Claims Allowed:</b>  39	
/Kevin T Truong/ Supervisory Patent Examiner, Art Unit 3775  (Primary Examiner)	(Date)	O.G. Print Claim(s)  1	O.G. Print Figure  2

<b>Issue Classification</b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775


/CHRISTOPHER BECCIA/ Examiner, Art Unit 3775  (Assistant Examiner)	06/03/2013  (Date)	<b>Total Claims Allowed:</b>  39	
/Kevin T Truong/ Supervisory Patent Examiner, Art Unit 3775  (Primary Examiner)	(Date)	O.G. Print Claim(s)  1	O.G. Print Figure  2

<b>Issue Classification</b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

<input type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> <input type="checkbox"/> <b>CPA</b> <input type="checkbox"/> <b>T.D.</b> <input type="checkbox"/> <b>R.1.47</b>															
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	15		31	12	47	28	63								
	16		32	13	48	29	64								

/CHRISTOPHER BECCIA/ Examiner, Art Unit 3775  (Assistant Examiner)	06/03/2013  (Date)	<b>Total Claims Allowed:</b>  39	
/Kevin T Truong/ Supervisory Patent Examiner, Art Unit 3775  (Primary Examiner)	  (Date)	O.G. Print Claim(s)  1	O.G. Print Figure  2

Receipt date: 04/08/2013

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

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Approved for use through 07/31/2012. OMB 0651-0031

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		12918071	
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

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<b>Receipt date: 04/08/2013</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071	12918071 - GAU: 3775
	Filing Date		2010-10-29	
	First Named Inventor	Bernard Prandi		
	Art Unit	3775		
	Examiner Name	C. J. Beccia		
	Attorney Docket Number	TRAUMA 3.3-647		

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Examiner Signature	/Christopher Beccia/		Date Considered 06/03/2013
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<b>Receipt date: 04/08/2013</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <b>( Not for submission under 37 CFR 1.99)</b>	Application Number		12918071      12918071 - GAU: 3775
	Filing Date		2010-10-29
	First Named Inventor	Bernard Prandi	
	Art Unit	3775	
	Examiner Name	C. J. Beccia	
	Attorney Docket Number	TRAUMA 3.3-647	

### CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

### SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Brent L. Farese/	Date (YYYY-MM-DD)	2013-04-08
Name/Print	Brent L. Farese	Registration Number	63617

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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12918071 - GAU: 3775

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.B./



EAST Search History

**EAST Search History****EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"12918071"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:53
S2	44	prandi-bernard.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:53
S3	4	US-6576018-\$.DID. OR US-1331018-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:53
S4	4	US-20080161860-\$.DID. OR US-1331018-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:54
S5	226	US-2486303-\$.DID. OR US-3528085-\$.DID. OR US-3534731-\$.DID. OR US-3779240-\$.DID. OR US-4388921-\$.DID. OR US-4408601-\$.DID. OR US-4651724-\$.DID. OR US-4800874-\$.DID. OR US-4988350-\$.DID. OR US-4493317-\$.DID. OR US-5304180-\$.DID. OR US-5487741-\$.DID. OR US-5662655-\$.DID. OR US-5667510-\$.DID. OR US-5674222-\$.DID. OR US-5709686-\$.DID. OR US-5810822-\$.DID. OR US-5853413-\$.DID. OR US-5904684-\$.DID. OR US-3364720-\$.DID. OR US-5931839-\$.DID. OR US-6146382-\$.DID. OR US-6183475-\$.DID. OR US-6348052-\$.DID. OR US-6379359-\$.DID. OR US-6383186-\$.DID. OR US-6533786-\$.DID. OR US-6544266-\$.DID. OR US-6565570-\$.DID. OR US-6623486-\$.DID. OR US-6626907-\$.DID. OR US-3364731-\$.DID. OR US-6669700-\$.DID. OR US-6669701-\$.DID. OR US-6692503-\$.DID. OR US-6712820-\$.DID. OR US-6719759-\$.DID. OR US-6960211-\$.DID. OR US-7037342-\$.DID. OR US-7108697-\$.DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/01/21 15:55

## EAST Search History

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## EAST Search History (Interference)

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6/ 3/ 2013 8:30:00 PM

C:\Users\cbeccia\Documents\EAST\Workspaces\12918071.wsp

<b><i>Index of Claims</i></b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

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<b><i>Index of Claims</i></b> 	<b>Application/Control No.</b> 12918071	<b>Applicant(s)/Patent Under Reexamination</b> PRANDI ET AL.
	<b>Examiner</b> CHRISTOPHER BECCIA	<b>Art Unit</b> 3775

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
=	<b>Allowed</b>	÷	<b>Restricted</b>	I	<b>Interference</b>	O	<b>Objected</b>

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	<b>Examiner</b>  CHRISTOPHER BECCIA	<b>Art Unit</b>  3775

✓	<b>Rejected</b>	-	<b>Cancelled</b>	N	<b>Non-Elected</b>	A	<b>Appeal</b>
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

530	7590	08/15/2013
LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090		

EXAMINER	
BECCIA, CHRISTOPHER J	

ART UNIT	PAPER NUMBER
3775	

NOTIFICATION DATE	DELIVERY MODE
08/15/2013	ELECTRONIC

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The time period for reply, if any, is set in the attached communication.

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
12/918,071	29 October, 2010	PRANDI ET AL.	TRAUMA 3.3-647

LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090		<b>EXAMINER</b>	
		CHRISTOPHER BECCIA	
		<b>ART UNIT</b>	<b>PAPER</b>
		3775	20130806

DATE MAILED:

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Commissioner for Patents

3. In view of the request to correct inventorship under 37 CFR 1.48 and the accompanying papers filed before September 16, 2012, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48 (a). The inventorship of this application has been changed by the addition of Charles P. Wapner and Peter W. Wapner.

The application will be forwarded to the Office of Patent Application Processing (OPAP) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

/Kevin T Truong/  
Supervisory Patent Examiner, Art Unit 3775

/CHRISTOPHER BECCIA/  
Examiner, Art Unit 3775

PTO-90C (Rev.04-03)



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO.	TOT CLAIMS	IND CLAIMS
12/918,071	10/29/2010	3775	1715	TRAUMA 3.3-647	7	1

CONFIRMATION NO. 5973

## CORRECTED FILING RECEIPT



\*OC000000063496656\*

530  
 LERNER, DAVID, LITTENBERG,  
 KRUMHOLZ & MENTLIK  
 600 SOUTH AVENUE WEST  
 WESTFIELD, NJ 07090

Date Mailed: 08/29/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

## Inventor(s)

Bernard Prandi, Rennes, FRANCE;  
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 Charles P. Wapner, Media, PA;  
 Peter W. Wapner, Media, PA;

## Applicant(s)

Bernard Prandi, Rennes, FRANCE;  
 Keith Wapner, Philadelphia, PA;  
 Charles P. Wapner, Media, PA;  
 Peter W. Wapner, Media, PA;

**Power of Attorney:** The patent practitioners associated with Customer Number 00530

**Domestic Priority data as claimed by applicant**

This application is a 371 of PCT/FR09/51879 10/02/2009

**Foreign Applications** (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

FRANCE 0856694 10/02/2008

**If Required, Foreign Filing License Granted:** 11/10/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/918,071**

**Projected Publication Date:** Not Applicable

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

**Preliminary Class**

606

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:**

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## PART B -FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
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P.O. Box 1450  
Alexandria, Virginia 22313-1450  
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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)  
(Signature)  
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/29/2010	Bernard Prandi	TRAUMA 3.3-647	5973

TITLE OF INVENTION: ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1,780.00	\$300.00		\$2,080.00	09/13/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
C. J. Beccia	3775	606-286000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
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1 Lerner, David, Littenberg, Krumholz & Mentlik, LLP

2

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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

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☐ Applicant asserts small entity status. See 37 CFR 1.27.  
☐ Applicant changing to regular undiscounted fee status.

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Authorized Signature /Brent L. Farese/  
Typed or printed name Brent L. Farese

Date September 10, 2013  
Registration No. 63,617

Application No. (if known): 12/918,071

Attorney Docket No.: TRAUMA 3.3-647

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63,617

Registration Number, if applicable

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Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>	12918071			
<b>Filing Date:</b>	29-Oct-2010			
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS			
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi			
<b>Filer:</b>	Cicero H. Brabham			
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647			
Filed as Large Entity				
<b>U.S. National Stage under 35 USC 371 Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl Issue Fee	1501	1	1780	1780

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				2080

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	16806961
<b>Application Number:</b>	12918071
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5973
<b>Title of Invention:</b>	ORTHOPEDIC IMPLANT IN THE FORM OF A PLATE TO BE FIXED BETWEEN TWO BONE PARTS
<b>First Named Inventor/Applicant Name:</b>	Bernard Prandi
<b>Customer Number:</b>	530
<b>Filer:</b>	Cicero H. Brabham
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	TRAUMA 3.3-647
<b>Receipt Date:</b>	10-SEP-2013
<b>Filing Date:</b>	29-OCT-2010
<b>Time Stamp:</b>	10:25:44
<b>Application Type:</b>	U.S. National Stage under 35 USC 371

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Issue Fee Payment (PTO-85B)	Issue_Fee_Transmittal_1.pdf	41521 182f8194d276b9681f283b4d3b7ffa50d0592ca0	no	2
<b>Warnings:</b>					
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2	Fee Worksheet (SB06)	fee-info.pdf	32292 7c0a9e75997710195731e35570fd56e03cd39ff5	no	2
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<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/918,071	10/15/2013	8556946	TRAUMA 3.3-647	5973

530 7590 09/25/2013  
 LERNER, DAVID, LITTENBERG,  
 KRUMHOLZ & MENTLIK  
 600 SOUTH AVENUE WEST  
 WESTFIELD, NJ 07090

**ISSUE NOTIFICATION**

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
 (application filed on or after May 29, 2000)

The Patent Term Adjustment is 420 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Bernard Prandi, Rennes, FRANCE;  
 Keith Wapner, Philadelphia, PA;  
 Charles P. Wapner, Media, PA;  
 Peter W. Wapner, Media, PA;

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**PATENT TRIAL AND APPEAL BOARD**

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STRYKER CORPORATION and  
WRIGHT MEDICAL TECHNOLOGY, INC.,  
Petitioners,

v.

OSTEOMED LLC,  
Patent Owner.

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Case IPR2021-01450  
U.S. Patent No. 8,529,608

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**PATENT OWNER RESPONSE**

Putting aside Petitioners' improper hindsight recreation of the claimed invention, *Slater* fails to disclose multiple requirements of the Challenged Claims. For example, *Slater* discloses a plate designed to allow a surgeon wide latitude to variably choose the angle of the screw through the ankle joint, whereas the '608 Patent claims a plate that guides the surgeon to a fixed trajectory of the screw with respect to the neutral bending axis. *Slater* also fails to disclose *when, how*, or even *if* tensile load is absorbed through the cross-joint screw and into a specific portion of the *Slater* plate. For this element, Petitioners assume a location of threads on a two-bone screw that is nowhere disclosed in *Slater*, and then assume, citing no disclosure from *Slater*, that this screw would absorb tensile load and transfer it into the bridge portion of *Slater's* plate. Petitioners' use of a conclusory expert declaration to fill the gaps absent in *Slater's* express disclosure cannot save their anticipation challenge. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 851 F.3d 1270, 1274-75 (Fed. Cir. 2017) ("Kennametal does not permit the Board to fill in missing limitations simply because a skilled artisan would immediately envision them."). Petitioners' combination of *Slater* with *Weaver* does not address any of *Slater's* deficiencies, and therefore Petitioners' argument that *Slater* and *Weaver* render claims 6 and 8 obvious fails for the same reasons.

Petitioners' argument that *Falkner* anticipates claims 1-3, 6, 8-13, and 17 similarly fails for numerous reasons. *Falkner's* plate is not configured to secure two

discrete bones across a joint, nor could it be without extensive modification that is nowhere disclosed in *Falkner*. (Ex. 2002, ¶ 135). To satisfy the requirement of the claimed “second end,” Petitioners rely on the external plate portion of *Falkner* because the claimed second end must substantially conform to the geometry of the bone. Yet for other claim elements, Petitioners rely on the internal blade portion to demonstrate that the bridge portion is thicker than at least a portion of the second end. This shifting sands approach belies a theory based on anticipation. Finally, the bone discontinuity of *Falkner* does not intersect the bridge portion Petitioners identify, but rather intersects below the fixation point on Petitioners’ identified second end of the plate. Petitioners’ combination of *Falkner* with *Arnould* does not address any of these deficiencies, and therefore Petitioners’ argument that *Falkner* and *Arnould* render claims 4, 5, and 14 obvious fails for the same reasons.

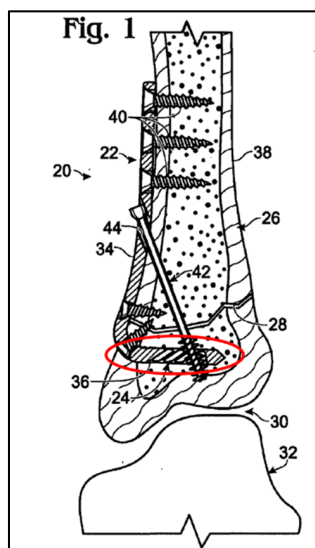
Petitioners’ challenge to claims 1-5, 9-14, and 17 based on the combination of *Arnould* and *Slater* fares no better. Petitioners’ argument for substituting *Slater*’s purported “thickened bridge portion” for the bridge portion of *Arnould* contradicts *Arnould*’s express disclosure that it is advantageous for this portion of the *Arnould* plate to be deformable to allow “better adaptation of the plate body 10 to the anatomy of the [MTP] joint when it is locked.” (Ex. 1008, ¶ [0020]). Petitioners’ attempt to modify *Arnould* in a manner explicitly disparaged in the reference itself eliminates any reasonable motivation to combine *Arnould* with the teachings of *Slater*.



Additionally, while the plate 1 shown in Figure 1 has a screw through the cross-bone screw hole, the plate shown in Figure 5 does not. (Ex. 2002, ¶ 60). *Slater* does not provide any description of what a screw passing through hole 93 of the Figure 5 plate 80 would require. (*Id.*).

**D. *Falkner* (Ex. 1006)**

*Falkner* details a specific type of plate that includes a portion external to the bone, as well as a blade portion configured to splice into the interior of the bone, as depicted in *Falkner's* Figure 1 below circled in red, which is typically called a “blade-plate.” (Ex. 2002, ¶¶ 62, 63).



(Ex. 1006, Fig. 1 (annotated)).

bones together across a joint between two bones”; (2) a “second end” that includes a fixation point and an “inner surface configured to substantially conform with a geometry of the second bone; and (3) “a bridge portion configured to span across the joint.” (Ex. 1001, cl 1; *see also* cl. 11).

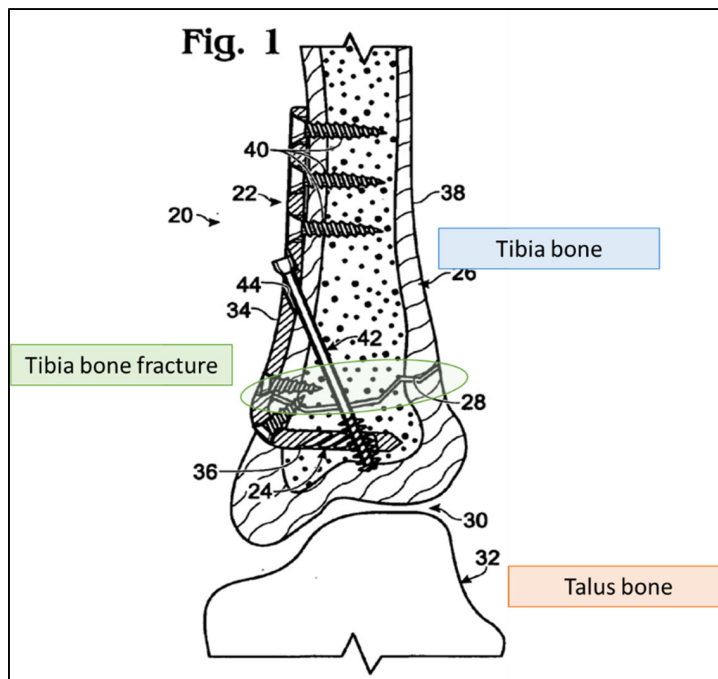
**a. *Falkner* fails to disclose a “system for securing two discrete bones together across a joint between the two bones”**

*Falkner*’s plate is not designed to secure “two discrete bones together across a joint between the two bones.” This is plain from Figure 1 itself, which shows a blade-plate solely on the tibia bone with the talus bone untouched. (Ex. 2002, ¶ 134).

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15-23), Patent Owner responds to Petitioners’ arguments in the context of claim

1. This response applies equally to claim 11, unless otherwise noted.



(Ex. 1006, Fig. 1 (annotated)).

While *Falkner* explains that this type of blade-plate may be configured to cross a joint rather than a bone fracture, *Falkner* includes “a dearth of detail about such a hypothetical plate’s actual design.” (Paper 6, 31; Ex. 2002, ¶ 135). To make a *Falkner*-type plate that crosses a joint would require extensive modification such as:

[The] angle of blade portion to external portion, size of blade portion, length of plate portion, thickness of blade portion, tip geometry of blade portion, interlocking angle of screw, position of plate in respect to subchondral bone, distance of blade portion in respect to subchondral bone, amount and size of fixation screw in each segment, anatomic structures, kinematic considerations (e.g. expected loading configurations), etc.

(Ex. 2002, ¶ 135).

Because these details are not disclosed anywhere in *Falkner*, it cannot anticipate a claim requiring a plate that spans across a joint. Rather than identify any relevant disclosure from *Falkner*, the Petition relies on Dr. Gall to explain how the plate disclosed in *Falkner* would allegedly meet the claims of the '608 Patent. (See Paper 2, 40-49 (citing Ex. 1002, ¶¶ 173-184); *see also* Paper 2, 56-58 (citing Ex. 1002, ¶¶ 218-229 (cl. 11)).

This expert testimony far exceeds what is described in the “four corners of that document [] either expressly or inherently,” and as such, *Falkner* cannot be found to anticipate the '608 Patent. *See VirnetX Inc. v. Apple Inc.*, 665 F. App'x 880, 885 (Fed. Cir. 2016). This is not anticipation. *See Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010) (“The requirement that the prior art elements themselves be ‘arranged as in the claim’ means that claims cannot be ‘treated ... as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning.’”) (citation omitted). Petitioners’ arguments impermissibly stretch the disclosure of *Falkner* to support an invalidity challenge based on anticipation. Because *Falkner* does not disclose all of the limitations of claims 1 and 11 as arranged in the claim, expressly or inherently, Ground 3 fails.